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DEXEDRINE VERGIFTIGING

TWEE GEVALLE WAARVAN EEN NOODLOTTIG

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Deksamfetamiensulfaat (Dexedrine), amfetamiensulfaat (Benzedrine) en tot 'n mindere mate metamfetamien (Desoxyn) is populêre middels wat onlangs in 'n hoofartikel van hierdie *Tydskrif*[1] bespreek is. Daar is gewys op die populariteit hiervan by die algemene publiek, op die twyfelagtige waarde in die behandeling van vetsug en op die gevare en ongewenste reaksies aan hierdie middels verbonde. Toediening behoort slegs onder strenge mediese toesig te geskied, tog is hierdie middels vandag alreeds so goed bekend aan die publiek en veral aan studente dat daar in menige huis sekerlik hiervan in die medisynekissie te vinde is.

Hierdie verslag wil veral die aandag daarop vestig hoe gevaarlik en noodlottig hierdie middels vir kinders kan wees as hulle dit per ongeluk in die hande kry en inneem.

GEVALBESPREKING

'n Blanke seuntjie en dogtertjie (broer en suster) ouderdomme 3 en 5 jaar onderskeidelik, het uit die platteland hier kom kuier, volkome gesond. Terwyl hulle een aand alleen in die badkamer besig was, tussen 7 en 7.30 nm., moes hulle op een of ander manier die botteltjie Dexedrine tablette in hande gekry het. Daar was oorspronklik 24 tablette en later kon net 8 teruggevind word. Vermoedelik het die tweetjies dus 16 tablette ingeneem, waarskynlik 8 tablette (totaal 40 mg.) elk. Lateraan het die dogtertjie gesê dat hulle twee-twee tablette tegelyk geneem het, maar sy kon nie sê hoeveel elkeen of wie die meeste ingeneem het nie. Hierna is hulle self na bed.

'n Uur daarna is opgemerk dat die seuntjie in sy slaap op die bed begin rondrol soos met 'n nagmerrie en aanhoudend gekreun en gesteun het in sy slaap. Uiteindelik het hy skreeuend uit sy bed geval. Net hiervóór het hy eenkeer opgegooi en ook 'n urinelosing sowel as defekasie in sy bed gehad. Hy was heeltemal ‚deurmekaar' en het sy arms en bene rondgeswaai en geskop sonder kontrole; daar was egter nie konvulsies nie. Sy oë het besonder helder en skerp voorgekom.

Teen hierdie tyd was die dogtertjie (5 jaar) nog heeltemal normaal, maar het nou begin kla van duiseligheid. Sy het ook 'n urinelosing en defekasie gehad maar waarskynlik nog willekeurige en (?) onder kontrole. Sowat 2½ uur na die inname van die tablette is beide na die hospitaal geneem en op hierdie tydstip is die oorblywende tablette ontdek en is die vermoede van inname hiervan deur die dogtertjie bevestig.

Om 11 nm. is hulle in die Ongevalle Afdeling van die Pretoriase Algemene Hospitaal opgeneem na hulle ± 1 uur voor opname deur 'n privaat geneesheer fenobarbitoon gr. 1 i.m. (60 mg.) en nembutal gr. 1½ (100 mg.) per rektum toegedien is.

Beide was nou in 'n toestand van absolute manie, totaal deurmekaar en onbeheerbaar. Kliniese ondersoek was feitlik onmoontlik. In beide het dit geluk om 'n buis in die maag te kry vir maaguitspoelings, maar geen reste van die tablette is gevind nie. Hierna is aan beide toegedien 3 dragma paraldehide in glukosewater per rektum en ook 10 c.c. Vit. C i.m.[20]

Ongeveer 'n uur later, d.w.s. omtrent 5 uur na die tablette geneem is, is elkeen weer fenobarbitoon gr. 3 i.m. (180 mg.) toegedien en daarna oorgeplaas na die Beatrixstraatse Kinderafdeling.

Met ondersoek: (a) *Die Seuntjie*. 'n Goedgevoede seuntjie van 3 jaar, lê aanhoudend in die bed en rondrol, swaai voortdurend met sy arms en bene en skyn heeltemal deurmekaar te wees. Hy voel koud en klam. Sy pols was nie voelbaar nie en die bloeddruk kon nie bepaal word nie, sy pupille was baie groot en het feitlik niks op lig reageer nie. Die hartklanke was duidelik hoorbaar, die hartspoed was baie vinnig en is geskat op 200 per minuut. Asemhaling was baie vinnig, vlak met onreëlmatige pouses, geen bykomstighede is in die toraks waargeneem nie. Verdere ondersoeke was eintlik fisies onmoontlik. Daar is gevoel dat hierdie pasiëntjie besig is om homself baie vinnig uit te put en moes ten alle koste rustig gemaak word, aangesien die paraldehide en fenobarbitoon skynbaar geen effek getoon het nie. Na aanleiding hiervan en Davison[19] se aanbeveling is skopolamien hidrobromide gr. 1/300 (0.2 mg.) toegedien. Hy het 'n ietwat rustiger geword maar was na 'n uur weer net so rusteloos en opgewonde as vantevore waarna 'n verdere gr. 1/300 (0.2 mg.) toegedien is. Dit het geen effek getoon nie. Om 5.30 vm. is hy in 'n staat van totale uitputting oorlede—10½ uur na inname van die Dexedrine tablette.

'n *Lyskouing* is 24 uur later in die staatslykshuis deur Prof. C. J. N. Loubser gedoen; sy bevindinge was as volg:

Cerebrum, skedel, ens.: Harsings gestu en edemateus. Beide ventrikels baie uitgeset met 'n drukkonus.

Vaatstelsel: Subendokardiale bloedings teenwoordig.

Asemhalingstelsel: Kolle pneumonie was op oppervlakte van beide longe gevind.

Epiglottis: Dit was toegevou met effe edeem van die glottis.

Ingewande: Maag leeg. Slymvlies normaal.

Lewer: Vetterig.

Milt: Gestu en limfaties.

Niere: Beide gestu.

Ander organe: Vergrote timusklier.

(b) *Die Dogterjie* (5 jaar): Sy was ook goed gevoed, maar in 'n minder rustelose staat as die seuntjie sodat 'n kliniese ondersoek hier met meer sukses uitgevoer is. Haar pupille was ook opvallend vergroot en het effens stadig reageer op lig. Haar pols was goed voelbaar met goeie volume en gereelde ritme, spoed 130 per min., B/d 140/90. Harttone normaal

sonder geruise. Asemhaling was vinnig, 56 per min. maar reëlmatig. Met opname was haar temperatuur 104°F. Geen abnormale longklanke was gehoor nie. Die abdomen kon gedurende die tye van ontspanning ondersoek word en geen milt of lewer is gevoel nie.

Sy het ook skopolamien hidrobrom. gr. 1/300 (0.2 mg.) 2 keer gekry, om 3 vm. en 4 vm. waarna sy bietjie kalmer geword het. Om 7 vm. het sy weer meer rusteloos geword en is weer Na luminal toegedien, gr. 2½ (150 mg.) i.m. Dit het geen effek getoon nie. Die rusteloosheid en veral hallusinasies het nou voel erger geword en om 10 vm. is begin met magnesiumsulfaat 50% i.m. inspuitings, 2 ml. 4 uurliks toegedien. Na die tweede inspuiting het sy heelwat kalmer geword en toe vir die eerste keer vir 50 minute geslaap. Die indruk is verkry dat hierdie magnesiumsulfaat die enigste middel was wat enige kalmerende effek getoon het. Hierna het haar rusteloosheid toegeneem en het dit weer so erg geword dat die traliebedjie met kussings toegepak gehou moes word om te verhoed dat sy haarself nie beseer nie. Om 6 nm. was sy weereens so erg en na 2 ml. paraldehide i.m. het sy effens bedaar. Om 9.45 nm. is 'n verdere 5 ml. i.m. toegedien waarna sy vir 4 uur aanmekaar geslaap het.

Die volgende dag was sy heelwat kalmer. Haar pols was nog in die buurt van 140–160 per min., temperatuur 101°F., en rongi en krepitasies het nou in beide longe verskyn. Hiervoor is aureomycin 250 mg. 6 uurliks toegedien wat sy wel ingehou het. Haar koors het geleidelik gedaal soos die brongopneumonie verbeter het in die loop van 4 dae. Na die derde dag was haar geestestoestand en kalmte heeltemal normaal en is alle terapie gestaak behalwe die aureomycin en het sy geleidelik begin sterker word. In die begin het sy baie onseker en waggelend geloop maar dit het gou reggekom. Haar bloedtelling 6 dae na opname was as volg: Hemoglobin 15.6 gm./100 ml.—105%; rooiselle 5.2 miljoen; witselle 12,000; polimorfe 45%, limfosiete 48%, monosiete 6%, eosinofiele 1%; bloedplaatjies normaal; bloedbesinking 6 mm./1e uur. Sy is die agste dag ontslaan.

BESPREKING

In die beskikbare Engelse en Amerikaanse literatuur is daar heelparty gevalle beskryf van vergiftiging deur amfetamiensulfaat, maar nog net drie noodlottige gevalle waarvan op twee lykskouings gedoen is, word genoem. Die eerste geval is dié van Smith[12] van 'n 15-jarige student wat beswyk het terwyl hy nog besig was met eksamenskryf. Dit het geblyk dat hy 'n halwe tablet (5 mg.) van amfetamiensulfaat voor elke eksamen ingeneem het. Die dag van sy dood het hy alreeds 30 mg. so ingeneem en voor sy laaste eksamen 10 mg. Hy het meteens ineengestort en is binne 'n paar minute oorlede. Met lykskouing na 4½ uur is daar stuwing van die lewer, maagslymvlies, meningealevate, epiploise kongestie en 'n baie uitgesette maag gevind. Verder was daar geen besondere afwykings nie. Die harsings en boonste gedeelte van die rugmurg het geen afwykings getoon nie.

Vier jaar later volg die tweede noodlottige geval van Hertzog en andere[13] in 'n dogtertjie van 1 jaar wat minstens 4 tablette amfetamiensulfaat (40 mg.) tesame met 'n onbekende aantal tablette van ferrosulfaat van 3 grein (200 mg.) elk ingeneem het. Hulle het haar toestand en dood net toegeskryf aan die 40 mg. amfetamiensulfaat en het die ferrosulfaat tablette as onskuldig beskou. Daar kan net hier gemeld word dat alreeds 8 noodlottige gevalle van ferrosulfaatvergiftiging[21] rapporteer is, en dat dit in hierdie geval tog 'n rol kon gespeel het. 'n Lykskouing hier na 3 uur toon onlangse bloedings, in die maagwand en byniere, veral in die regter bynier medulla en ook edeem van beide longe. In hierdie geval is ondersoek van die brein ongelukkig nie toegelaat nie.

Die opvallende bevinding by die lykskouing van ons pasientjie was die groot uitgesette laterale en derde ventrikels, en die drukkonus wat dui op 'n interne hidrokefalus. Verder is gevind die terminale bronchopneumonie na verwagting asook die gestude milt en niere. Die meningeale vate was nie besonder baie gestu soos in die geval van Smith[12] nie. Die vettige lewer kon nie verklaar word nie aangesien sy voedingstoestand baie goed was en daar geen vorige geskiedenis van 'n gastroenteritis of ander dergelike siekte was nie.

In 1950 rapporteer Mitchell en Denton[11] die dood van 'n 21-jarige verpleegster wat 1,250 mg. Dexedrine oor 'n periode van 9 maande gebruik het. Sy is opgeneem met petechiae, vergrote limfkliere, neus en vaginale bloedings. Ten spyte van 17 liters bloed is sy tog oorlede. Bloed en beenmurg ondersoeke het 'n pansitopenie getoon. Hier is geen lykskouing gedoen nie.

Daar blyk dus geen opvallende ooreenstemmende patologiese bevindings te wees nie. In die eerste geval was die uitgesette maag opvallend, in die tweede geval die bloedings in die medulla gebied van die bynier en die maagwand, in die derde geval die hipoplastiese beenmurg en in hierdie geval die uitgesette ventrikels.

In 'n uitgebreide ondersoek op verskillende proefdiere kon Ehrich, Lewy en Krumbhaar[14] ook geen spesifieke anatomiese veranderinge te wyte aan amfetamiensulfaat vergifting aantoon nie. Hul mees algemene bevinding was die wat gepaard gaan met hipertensie, uitsetting van die hart, stuwing van die lewer en milt, subperikardiale en subpleurale bloedings en in sommige diere wel nekrose van die lewer en milt. Aantasting van die sentrale senuweestelsel van ape het veral bestaan uit veneuse stase, periveneuse bloedings en toksiese degenerasie van die harsingselle.

Die skrywers[14] het ook die minimum letale dosis vir die verskillende diere bepaal en vir jong ape wat die gevoeligste was, is dit 5 mg./kg. en in die volwasse aap 20–25 mg./kg. Gestel die seuntjie het wel 40 mg. dekstroamfetamien ingeneem en sy geskatte gewig was omtrent 32 pond, dan het hy 2.8 mg./kg. ingekry en die dogtertjie van 40 lb. 2.2 mg. per kg. Die geval van Smith[12] het slegs 0.53 mg./kg. ingeneem en dié van Hertzog[13] 3.5 mg./kg. plus die ferrosulfaat. Eersgenoemde geval word egter ook as 'n moontlike idiosinkrasie beskou. Daar is heelwat gevalle beskryf waar amfetamien terapeuties en in besondere hoë dosisse in gekontroleerde eksperimente toegedien is met getroue waarneming van enige toksiese nagevolge, ook van gevalle van vergifting wat weer herstel het. As voorbeelde hiervan word net die volgende genoem. Anderson en Scott[2] verwys na verskeie gevalle waar amfetamien in hoë dosisse oor lang periodes toegedien is: Matthews het 90 mg. per dag aangewend, Korns en Randall het 150 mg. daagliks vir 6 maande gegee, Solomon, Mitchell and Prinzmetal 160 mg./dag vir 3 weke, Mackay vertel van 'n 37-jarige man wat per ongeluk 450 mg. meteens ingeneem het en na 'n opgewonde paar dae en nembutal-toediening weer herstel het; Davies[3] rapporteer van 'n geval met kollaps, braking en 'n erge anemie in 'n student wat 'n totaal van 190 mg. (amfetamiensulfaat) ongereeld oor 'n periode van 18 dae geneem het; Norman en Shea[5] skryf van 'n 49-jarige man wat 5 jaar lank vanaf 40 mg. tot uiteindelik 250 mg./dag

geneem het tot sy geestesstoornisse hom na 'n hospitaal gedwing het. Laasgenoemde het veral uit gesigshallusinasies bestaan; hy het terloops oor hierdie periode geen gewigsverlies en geen styging van sy bloeddruk getoon nie. Mitchell en Denton [11] noem 'n geval van 'n man wat 9 jaar lank 15–30 mg. amfetamiensulfaat per dag geneem het sonder nadelige gevolge. Shorvon [9] se geval het 125 tot 150 mg. per dag geneem periodies vir maande oor 'n tydperk van 4 jaar, sonder enige nadelige gevolge. Nadat dit skielik gestaak is, was vermeerderde rusteloosheid, slapeloosheid en 'n erge honger sy enigste onthoudingsimptome. Wallis en andere [10] se geval van 29 jaar toon weer stupor, met gesigs- en gehoorshallusinasies na 'n inname van net 55 mg. op een keer. En soos reeds genoem, het Smith se geval beswyk na slegs 30 mg. ingeneem is. Hieruit blyk dit dus duidelik hoe sommige indiwidue hoë dosisse van amfetamien oor 'n lang periode kan verdra en sommige weer hewige reaksies ondervind en selfs beswyk na inname van kleinere hoeveelhede.

Pasiënte met barbituraat vergiftiging blyk 'n groot weerstand te bê teenoor die amfetamine wanneer laasgenoemde terapeuties daarvoor toegedien word. Dick [7] het sulke gevalle behandel met amfetamiensulfaat as hoof analeptiese middel. In 'n geval wat 30 gr. (2 gm.) Seconal ingeneem het, het hy 320 mg. amfetamien binne 15 uur intraveneus gegee—tot die bewussyn herstel—en in 'n geval wat 75 gr. (5 gm.) luminal ingeneem het, het hy 360 mg. binne 37 uur en 700 mg. na 4 dae gegee. Die enigste effekte was 'n vinnige styging van die bloeddruk, maar geen stuiptrekkings of besondere opgewondenheid na die bewussyn herstel het nie. Tichner en Enselberg [22] het 'n ander geval van Dilantin vergifting 2,880 mg. amfetamien en 144 g. niketamide en 72 g. caffein i.v. gegee waarna die pasiënt allerlei aritmië ontwikkel het. Bennett en Walker [5] het egter amfetamiensulfaat tesame met nieketamide en kafeïen en natriumbenzoaat gebruik in 2 gevalle, 'n morfine en 'n Seconal vergifting, waarna hulle veral aritmië van die hart met afdruk van die S.T. segmente gekry het.

Die effekte van die amfetamien en verwante middels, toksies en andersins, is legio. Talle artikels waarvan sommige hierbo genoem is, is al daaroor geskryf. Waud [16] het baie interessante waarnemings hieroor gedoen en dit in 'n mooi tabelvorm weergegee na hy die effekte van die Benzedrine-inasemer (,inhaler') in 'n jong man ondersoek het. Hy het ongeveer 650 mg. laat inasem (6.7 mg./kg.) in 'n periode van 4–6 uur en gee 85 verskillende effekte aan waarvan die meeste toksies en almal onplesierig was.

Om 'n volledige lys van al die effekte van amfetamien weer te gee, sal te lank wees en by wyse van opsomming kan die volgende genoem word:

1. Amfetamien en sy derivate toon tipiese effekte van simpatomimetiese prikkeling [17, 18] van die sentrale senuweesisteem met ook psigologiese verandering.

2. 'n Uitgebreide kardiovaskulêre aantasting met aritmië, hipertensie, tagikardie, ekstrasistolië, E.K.G. veranderinge, ens.

3. Hematologies: Vermindering van die sirkulerende eosinofiele,[4] 'n neiging tot onderdrukking van bloedvorminge (aplastiese anemie).

4. Respiratories: Tagipnee met emfiseem, dispnee.[18]

5. Genito-urinêr: diurese,[18] onvoldoende kontrole van die uretrale sfinkter, ongevoeligheid teenoor die prikkel van 'n vol blaas; eers verhoogde en kort daarna verlaagde libido.[11]

6. Maagdermkanaal: verlies van eetlus, hardlywigheid, diaree, mislikheid, opgooi.

7. Harsings: Euforie in die begin met depressie daarna, verhoogde geestesaktiwiteit en hallusinasies met verminderde vaardigheid; akute psigose met sy verskynsels.

8. Diverse: Kollaps met skielike dood as gevolg van 'n moontlike oorgevoeligheid,[12] algemene malaise, ens.

Die prikkelende uitwerking van amfetamien op die Sentrale senuweesisteem [18] tesame met die gevoel van verligting van moegheid en euforie het veral die idee laat ontstaan dat dit die studievermoë kan verskerp. Na aanleiding hiervan het Ewing, Moore en Moore [6] interessante eksperimente uitgevoer om die studie- of leervermoë van rotte op die proef te stel. Hulle het verskillende groepe van rotte na 24 uur wateronthouding, in 'n spesiale doolhof geplaas met 12 korrekte draaitjies tussen die ingang en doelwit ('n bakkie water) en 38 aparte verkeerde draaitjies en gemeet hoe lank dit die rotte neem om hul doelwit te bereik. 'n Sekere hoeveelheid amfetamien en van sy variante is toegedien, vanaf 0.5 mg.–4.0 mg./kg. en so vergelyk. Hulle het gevind dat dit gladnie die leervermoë van die rotte enigsins verbeter het nie.

VOORGESTELDE BEHANDELING VAN 'N AMFETAMIEN VERGIFTIGING

Hertzog [12] verklaar onomwonde dat daar geen spesifieke antidotikum is vir amfetamiensulfaat vergiftiging nie. Mackay [2] se geval van 450 mg. inname het nembutal gekry, en na 3–4 dae daarop herstel. Apfelberg [15] het matige dosisse van chloraalhidraat toegedien tesame met 5% dextrose in fisiologiese soutoplossing i.v. en suurstof per neuskateter. Geen andere behandeling is genoem nie behalwe die roetine gebruik by vergiftiging soos maaguitspoeling en antiskok terapie. Brennemann [20] noem barbiturate en askorbiensuur en Davison [19] weer skopolamien hidrobromied.

In bogenoemde twee kinders wat albei groot dosisse barbiturate gekry het, het dit geen effek getoon nie, selfs ook nie die skopolamien nie. Die enigste effek van rustigheid is verkry deur die magnesiumsulfaat 50% toediening en die paraldehide per inspuiting. 'n Trepanasie met ventrikelpunksie sou waarskynlik die interne hidrokefalus en drukkonus kon verlig het.

Hierdie twee gevalle wys veral op die gevaar wat die amfetamien groep vir kinders inhou en dit behoort altyd goed buite hul bereik gehou te word. Daar blyk ook geen terapeutiese aanwysing te wees in die gebruik daarvan in kindergeneeskunde nie, behalwe miskien in die geval van 'n barbituraat vergifting.[7]

OPSOMMING

Dexedrine vergiftiging in 'n seuntjie en dogtertjie onderskeidelik 3 jaar en 5 jaar oud, met noodlottige gevolge vir eersgenoemde word bespreek. Elkeen het waarskynlik 40 mg. ingeneem en albei was in 'n staat van uiterse prikkeling en opgewondenheid—akute manie. Die jongste is 10½ uur na inname oorlede; die mees prominente lykskouingbevinding was 'n akute interne hidrokefalus met uitgesette ventrikels.

Verskeie barbiturate as behandeling het geen uitwerking getoon nie en die beste resultaat is behaal met herhaalde inspuitings van paraldehide en 50% magnesiumsulfaat. Die dogtertjie het na 3 dae van sentrale senuweeprikkeling met geestesafwykings, gesigs- en gehoorshallusinasies herstel.

'n Oorsig van die literatuur volg met 'n bespreking van akute amfetamienvergiftiging en die noodlottige gevolge as kinders dit per ongeluk inneem.

SUMMARY

Two cases of accidental Dexedrine poisoning in a girl aged 5 years and a boy aged 3 years are presented with fatal results in the younger child. Each subject had apparently taken 40 mg., i.e. 8 tablets, probably one after another. Both cases exhibited signs of extreme irritability and excitement—actually a state of acute mania. The younger child died 10½ hours after ingestion of the drug and the most prominent autopsy finding was an acute internal hydrocephalus with dilated ventricles. In the treatment various barbiturates produced no sedative effect whatsoever and the most efficacious treatment was found to be repeated injections of paraldehyde and 50% magnesium sulphate.

The girl recovered in 3 days after manifesting the irritability and extreme excitement with visual and auditory hallucinations.

A review of the available literature follows with a discussion of acute amphetamine poisoning and the dangers and possible fatal outcome following the accidental ingestion of amphetamine by children.

My dank aan Prof. J. G. A. Davel onder wie se leiding hierdie rapport geskryf is, en Prof. C. J. N. Loubser, Hoofdistriksgeneesheer van Pretoria, vir die lykskouingsverslag.

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ABSTRACTS

Thompson, G. J., Albers, D. D. and Broders, A. C. (1953): *Unusual Carcinomas Involving the Prostate Gland,* J. Urol., **69,** 416.

This report is based on a review of 7 cases in which a squamous-cell carcinoma was apparently confined to the prostate gland; 8 cases in which a squamous-cell carcinoma arose in the epithelium of the vesical neck and involved the prostate gland; 6 cases in which an adenocarcinoma of the rectum subsequently extended to the prostate gland; one case in which metastasis to the prostate gland occurred several years after operation for carcinoma of the stomach; and one case in which a mucoid carcinoma of the prostate gland developed after the removal of a carcinoma of the lung (Mayo Clinic).

In the majority of cases, the smooth soft consistency of the prostate gland led the examiner to believe that a malignant lesion was not present. Most text-books of pathology do not describe types of prostatic carcinoma other than adenocarcinoma and the somewhat vague scirrhous carcinoma which is probably a variety of adenocarcinoma. After the malignant character of the lesions had been recognized in the 23 cases which are cited here, hormonal therapy was found to be ineffective. There was no elevation of the value of the serum acid phosphates in those cases in which the concentration of this enzyme was determined.

The survival period following operation was much shorter than it usually has been in the cases of adenocarcinoma of the prostate which the authors have observed. While most of the varieties of carcinoma which are mentioned here have been described previously in the literature, the authors feel that the unusual features in some of the cases, and the fact that not all prostatic carcinomas are adenocarcinomas, deserve more emphasis.

Wilkins and Judson (1953): *The Use of Rauwolfia Serpentina in Hypertensive Patients.* N. Engl. J. Med., **248,** 48.

The subjects selected for treatment with *Rauwolfia* in this study were unselected clinic or consulting room patients, usually with essential hypertension, in a few cases with renal hypertension. The authors' general conclusions are as follows: The drug is well tolerated by the oral route even if given for some months. The effect of the drug takes some time to appear, 3–6 days, and also takes considerable time to wear off—7–21 days. No serious side-effects were noted. It causes sedation and tends to improve sleep. It gives rise to bradycardia and to nasal congestion. It promotes a moderate hypotension (especially in labile patients with hypertension and tachycardia) and is most useful as an adjunct to more powerful hypotensive agents. It does not seem to be habit-forming, it tends to promote a gain in weight, and may somewhat increase the frequency of bowel movement. There is a striking additive, and possibly synergistic, effect of this drug in combination with hydrazinophthalazine and with veratum viride. The drug is a valuable addition to the list of agents which may be used against hypertension. More study of it will, of course, be needed. It is available as Raudiscin Verigitryl.

South African Medical Journal
Suid-Afrikaanse Tydskrif vir Geneeskunde

EDITORIAL

ROAD SAFETY

The National Road Safety Organization of South Africa has entered its fifth year of existence, having been established in 1948 as a non-profit-making Association registered under the Companies Act. Its objects in general can be stated to be the promotion and furtherance of road safety in South Africa in all its phases.

The Council of the Organization, which consists of not more than 100 members representing national organizations and public bodies and others appointed by the Minister of Transport, held its first meeting in Cape Town in 1949.

The Medical Association of South Africa is represented on the Council by Dr. A. W. Sichel, who is Chairman of Federal Council and has as his alternate Dr. J. H. Harvey Pirie, the immediate Past-Chairman of Federal Council. At the inaugural meeting of the Council of the Organization the representative of the Medical Association was elected to the Executive Committee of the Organization and has served in this capacity continuously for the past 4 years. In addition he has been a member of the Enforcement Sub-Committee and has acted as Chairman of a Task Group which has made recommendations to the Organization on all medical aspects of road safety, including the medical examination of drivers, standards of vision and of hearing, and chemical tests for drunkenness. These recommendations, with slight amendments, have been accepted by the Organization and incorporated in its policy.

In 1952 a total of 58,440 accidents occurred on our roads in the Union, involving 1,055 deaths and 18,169 injuries to individuals, making a total of 19,224 casualties in the year. These figures compel the close attention of all members of the medical profession and it behoves them as an important section of the public to use every effort to reduce the mortality of the roads, both in their capacity as private individuals and as doctors whose every effort it should be to prevent injury and death and alleviate suffering.

In what way can the medical practitioner play his part in preaching the gospel of road safety? In the first place his membership of local Road Safety Associations and, in rural areas, of Road Safety Committees, would be welcomed. Moreover, he can do much among his patients by advising those who suffer from physical disabilities or are psychologically unfit, to refrain from driving, or to exercise special care when so doing. In his domiciliary

VAN DIE REDAKSIE

PADVEILIGHEID

Die Nasionale Padveiligheidsorganisasie van Suid-Afrika se vyfde jaar van bestaan neem nou 'n aanvang. Gestig in 1948 en geregistreer as 'n nie-winsgewende vereniging onder die Maatskappyewet het dit ten doel om alle aspekte van padveiligheid in Suid-Afrika te bevorder.

Die Raad van die Organisasie is saamgestel uit nie meer as 100 lede nie, waarvan sommige uniale organisasies en openbare liggame verteenwoordig en ander deur die Minister van Vervoer aangestel is. Die Raad het sy eerste vergadering in 1949 in Kaapstad gehou.

Die Mediese Vereniging van Suid-Afrika word op die Raad deur die Voorsitter van ons Federale Raad, dr. A. W. S. Sichel, verteenwoordig, en in sy afwesigheid deur dr. J. H. Harvey Pirie, die vorige Voorsitter van ons Federale Raad. By die inwydingsvergadering van die Padveiligheidsraad was die Mediese Vereniging se verteenwoordiger as lid van die Padveiligheidsorganisasie se Dagbestuur gekies en in hierdie hoedanigheid het hy vir die afgelope 4 jaar gedien. Benewens is hy lid van die Handhawings-subkomitee asook Voorsitter van 'n Werkgroep wat aanbevelings aan die Organisasie voorlê i.v.m. die geneeskundige aspekte van padveiligheid, met inbegrip van die mediese ondersoek van bestuurders, die standaard van gesig en gehoor, en die chemiese toetse vir dronkenskap. Hierdie aanbevelings is met geringe wysings deur die Organisasie as deel van sy beleid aanvaar.

Gedurende 1952 het 58,440 ongelukke op die paaie van ons land plaasgevind, waarin 1,055 persone gedood en 18,169 beseer is, 'n totaal van 19,224 ongevalle vir die jaar. Hierdie ongevallesyfers noop alle lede van die mediese professie om ernstige aandag aan die probleem te skenk en om as 'n verantwoordelike groep van die samelewing alles in hul vermoë te doen om die dood van die pad te hou, in hul hoedanighede beide as private individue en as geneeshere wat elke poging moet aanwend om besering en sterfgevalle te verhoed en lyding te versag.

Op watter manier kan die geneesheer sy deel doen om padveiligheid te verseker? In die eerste plek sal die geneesheer as lidmaat van Plaaslike Padveiligheidsorganisasies en in plattelandse gebiede, van Padveiligheidskomitees, welkom geheet word. Daarenbowe kan hy 'n groot taak verrig deur diegene van sy pasiënte wat liggaamlik of geestelik ongeskik is aan te raai om nie te bestuur nie of om as bestuurders buitengewone versigtigheid aan die dag te lê. As huisdokter kan hy ouers gedurig maan om

work he can persistently advise parents to train their children to observe elementary precautions in crossing streets, riding bicycles and using the roadway generally.

Doctors, especially those practising in the country, occupy a position in the community where by personal example and by advice they can do a great deal to promote the principles of road safety among those with whom they come in contact, both socially and professionally.

One of the big problems of road safety, one that can be dealt with only by enforcement and education of the public, is the consumption of alcohol by users of public roads. The drunken driver will be dealt with by the administrators of the law, but the more difficult problem of the drinking driver is eminently one in which members of the medical profession can help through the essentially close contact which exists between them and their patients. The conscientious doctor does not hesitate to warn his patient against habits or actions which may prejudice his health; how much more important is it to do so when the risk of injury or death may involve many others besides the individual himself!

We appeal to all our members to give thought to the dangers of the highway and play their part in the attempt to reduce the truly terrifying accident rate which exists to-day on the roads of the Union of South Africa.

hul kinders te leer om padveiligheidsreëls na te kom wanneer hul strate kruis, fietsry en dies meer.

As gevolg van die plek wat hul in die samelewing inneem kan geneeshere, en in die besonder plattelandse geneeshere, deur persoonlike voorbeeld en raad baie doen om die beginsels van padveiligheid te bevorder in die kringe waarin hul sosiaal of professioneel beweeg.

Die verbruik van sterk drank deur gebruikers van openbare paaie is 'n groot padveiligheidsprobleem wat alleen deur handhawing van die wet en opvoeding van die publiek die hoof gebied kan word. Die gereg sal met die besope bestuurder afreken maar die geneesheer kan, weens die besondere verhouding tussen 'n pasiënt en sy geneesheer, by uitstek van hulp wees met die oplossing van die moeiliker probleem van die bestuurder wat drink. Die pligsgetroue dokter aarsel nie om sy pasiënt teen gewoontes of handelwyses te waarsku wat sy gesondheid mag benadeel nie des te belangriker is dit dat hy dit doen wanneer daar gevaar bestaan dat baie ander benewens die pasiënt self aan die risiko van dood of besering blootgestel word.

Ons doen 'n beroep op al ons lede om op die gevare van die pad ag te slaan en hul deel te doen om ons land se skrikwekkende ongevallesyfers te verminder.

EXPERIMENTAL BILHARZIASIS IN ANIMALS*

II. CORRELATION OF BIOCHEMISTRY ('LIVER FUNCTION TESTS') AND HISTOPATHOLOGICAL CHANGES IN THE LIVER IN EARLY BILHARZIASIS†

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MATERIAL AND METHODS

Two healthy adult monkeys (*Cercopithecus aethiops pygerythrus*) which had been in captivity for some months were selected. Biochemical tests as enumerated below, liver biopsies, blood counts and bilharzial complement fixation tests were carried out. The latter tests were negative and there was no eosinophilia. These monkeys were then infected with about 1,000 cercariae of *B.bovis* in the manner described by Lurie, de Meillon and Stoffberg.[1]

At weekly intervals thereafter blood was collected for eosinophil counts, bilharzial complement fixation and biochemical tests. At the same time liver biopsy samples were obtained by means of the Gillman needle. The biopsy specimens were fixed in formalin, embedded in paraffin, sections cut at 4μ and stained with haematoxylin and eosin. The biochemical tests and techniques used in this experiment were as follows:

Thymol turbidity test (MacLagan 1944).[2]
Thymol flocculation test (Neefe and Rheinhold 1946).[3]
Cephalin cholesterol flocculation test (Hanger 1939).[4]
Colloidal red test (Ducci 1947).[5]
Takata-Ara reaction (Ucko 1936).[6]
Serum proteins were estimated by a micro-Kjeldahl method using 27.2% sodium sulphate for the precipitation of the globulins (Pregl 1937).[7]
Gamma globulin (de la Huerga and Popper 1950).[8]
Zinc sulphate turbidity (Kunkel 1947).[9]
Lipid (Kunkel, Ahrens and Eisenhammer 1948).[10]
Pseudo-cholinesterase (Michel 1949).[11]
Serum bilirubin (Malloy and Evelyn 1937).[12]
Alkaline phosphatase (King and Armstrong 1934).[13]
Cholesterol (Kaye 1939–40).[14]

The results of the weekly biochemical tests carried out are enumerated in Tables 1 and 2.

* This investigation was carried out under the instigation and with the co-operation of the Bilharzia Natural History Unit of the C.S.I.R.

† Article I of the series appeared in S. Afr. Med. J., (1952): **26**, 1005.[1]

TABLE 1: RESULTS OF WEEKLY BIOCHEMICAL TESTS (ANIMAL 1)

	Control	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Thymol Turbidity Test (Units)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Thymol Flocculation Test	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Colloidal Red Test	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Cephalin Cholesterol Flocculation Test	Neg.	Neg.	Neg.	++++	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	++++	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Takata-Ara Reaction	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	+	Neg.	Neg.	Neg.	Neg.	++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	++	+++
Albumin grams %	3·7	4·1	4·1	4·0	3·8	3·6	4·0	3·7	3·8	3·7	3·9	3·3	3·1	2·9	2·6	2·3	2·3	2·1	2·4	2·4	2·3	3·0	3·1	2·9	2·9	2·2
Globulin grams %	2·6	3·6	2·9	2·8	2·9	3·0	3·3	3·2	3·0	3·4	3·2	3·4	3·6	3·7	3·8	4·3	5·1	4·9	4·7	4·4	4·9	3·9	4·5	5·0	4·8	5·5
Gamma Globulin grams %	1·68	1·47	1·47	1·47	1·77	1·58	1·68	1·45	1·65	1·63	1·99	1·77	2·06	2·15	2·18	2·52	2·15	2·44	2·30	2·29	2·39	2·36	2·52	2·59	2·19	2·82
Zinc Sulphate Turbidity (Units)	9·0	9·8	9·8	12·4	10·6	14·0	16·6	14·6	14·4	14·4	15·0	12·4	16·8	16·8	16·4	17·8	17·8	19·6	15·8	15·8	18·6	19·6	18·6	19·6	15·8	18·2
Bilirubin mgms. %	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3
Alkaline Phosphatase (Units)	27·6	29·0	29·2	24·5	28·6	35·5	29·5	26·0	30·2	25·6	20·0	23·0	23·2	29·2	28·5	28·5	33·9	30·1	18·0	20·6	18·5	22·3	22·0	25·0	27·3	24·6
Cholinesterase percentage	27·0	26·0	27·0	27·0	14·0	43·0	18·0	18·0	12·0	16·0	27·0	13·0	8·0	29·0	29·0	17·0	16·0	17·0	30·0	29·0	30·0	28·0	29·0	34·0	38·0	37·0
Lipids mgms. %	431·0	411·0	411·0	451·0	451·0	352·0	372·0	372·0	352·0	317·0	302·0	352·0	337·0	337·0	352·0	352·0	352·0	352·0	352·0	352·0	352·0	337·0	337·0	352·0	431·0	392·0
Total Cholesterol mgms. %	130·0	113·0	114·0	184·0	151·0	91·0	131·0	129·0	151·0	160·0	89·0	131·0	131·0	111·0	106·0	119·0	106·0	94·0	111·0	124·0	99·0	166·0	203·0	243·0	240·0	250·0
Cholesterol Esters mgms. %	108·0	91·0	90·0	153·0	119·0	60·0	97·0	102·0	120·0	116·0	60·0	106·0	107·0	73·0	78·0	86·0	74·0	67·0	80·0	101·0	55·0	123·0	154·0	195·0	179·0	188·0
Free Cholesterol mgms. %	22·0	22·0	24·0	31·0	32·0	31·0	34·0	27·0	31·0	44·0	24·0	25·0	24·0	38·0	28·0	33·0	32·0	27·0	31·0	23·0	44·0	43·0	49·0	48·0	61·0	62·0
Percentage Esters to Total Cholesterol	83·0	81·0	79·0	83·0	79·0	66·0	74·0	79·0	79·0	73·0	71·0	81·0	82·0	66·0	74·0	72·0	70·0	71·0	72·0	81·0	56·0	74·0	75·0	80·0	74·0	75·0

TABLE 2: RESULTS OF WEEKLY BIOCHEMICAL TESTS (ANIMAL 2)

	Control	1	2	3	4	5	6		8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Thymol Turbidity Test (Units)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Thymol Flocculation Test	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Colloidal Red Test	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Cephalin Cholesterol Flocculation Test	Neg.	+++	++	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	++++	Neg.	Neg.	++++	Neg.	Neg.	Neg.	Neg.	Neg.
Takata-Ara Reaction	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	+++	++	++	++	Neg.	Neg.	Neg.	+	++
Albumin grams %	4·1	5·0	4·7	4·4	4·2	3·9	4·2	4·1	4·3	3·8	3·9	3·2	3·2	3·1	3·1	3·1	3·2	2·8	2·9	2·6	2·4	3·4	3·4	3·6	3·9	3·0
Globulin grams %	2·2	3·0	3·2	2·9	2·6	2·6	2·8	2·8	2·9	2·9	3·1	3·2	3·6	3·2	3·0	3·5	3·5	4·4	3·7	3·4	3·8	3·4	3·7	3·6	3·6	4·5
Gamma-Globulin grams %	1·21	1·54	1·41	1·34	1·54	1·48	1·49	1·31	1·51	1·51	1·50	1·63	1·80	2·26	2·01	1·98	1·89	2·23	1·89	1·91	1·99	2·02	2·20	2·47	1·88	3·05
Zinc Sulphate Turbidity (Units)	8·2	9·8	9·8	9·8	9·8	9·4	9·4	9·0	10·0	9·8	9·8	11·4	11·4	15·8	14·4	15·0	15·8	24·6	20·6	20·8	21·6	19·6	19·6	21·6	14·8	18·8
Bilirubin mgms. %	0·4	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3	0·3
Alkaline Phosphatase (Units)	11·6	13·5	16·0	12·0	12·2	17·1	16·5	14·2	12·8	11·9	12·8	13·3	16·8	21·9	21·2	21·2	23·0	20·8	15·1	14·5	11·8	12·2	8·8	8·5	9·3	9·1
Cholinesterase percentage	23·0	10·0	20·0	11·0	16·0	4·0	8·0	10·0	6·0	12·0	11·0	3·0	8·0	23·0	18·0	9·0	4·0	7·0	16·0	18·0	18·0	23·0	10·0	15·0	22·0	20·0
Lipids mgms. %	337·0	451·0	411·0	431·0	411·0	346·0	411·0	392·0	451·0	352·0	362·0	377·0	372·0	357·0	391·0	337·0	367·0	352·0	352·0	352·0	352·0	367·0	352·0	352·0	392·0	347·0
Total Cholesterol mgms. %	139·0	140·0	118·0	121·0	151·0	111·0	127·0	137·0	133·0	147·0	94·0	89·0	131·0	102·0	98·0	117·0	98·0	100·0	131·0	122·0	93·0	199·0	166·0	221·0	209·0	237·0
Cholesterol Esters mgms. %	116·0	123·0	92·0	95·0	119·0	84·0	97·0	109·0	102·0	111·0	67·0	64·0	103·0	65·0	79·0	89·0	63·0	66·0	58·0	29·0	29·0	37·0	41·0	47·0	51·0	46·0
Free Cholesterol mgms. %	23·0	17·0	26·0	26·0	32·0	27·0	30·0	28·0	31·0	36·0	27·0	25·0	28·0	37·0	19·0	28·0	35·0	34·0	73·0	93·0	64·0	162·0	125·0	174·0	158·0	191·0
Percentage Esters to Total Cholesterol	84·0	88·0	78·0	79·0	79·0	76·0	76·0	79·0	77·0	75·0	71·0	72·0	78·0	63·0	81·0	76·0	64·0	66·0	56·0	76·0	69·0	81·0	75·0	79·0	75·0	80·0

The two monkeys showed the presence of a slight lymphocytic infiltrate in the portal tracts before they were infected. Similar findings were observed in several other apparently healthy monkeys. No significant changes were observed in the liver biopsies during the first 2 weeks after infection (Fig. 1).

At the end of the 3rd week the number of lymphocytes showed a definite increase, and polymorphonuclear leucocytes appeared. During the next 2 weeks the number of polymorphonuclear leucocytes increased markedly, and the lymphocytes decreased in numbers (Fig. 2). At this stage the parenchymal liver cells showed slight fatty changes. At the end of the 5th week the histological features were those of an acute hepatitis. It is generally accepted that at least 5 to 6 weeks must elapse before the schistosome matures and ova are laid. Our inference is therefore that it is the presence of the schistosomules in the portal veins that produces an acute hepatitis.

From the 6th week onwards eosinophils appeared in the portal tracts.

During the 7th, 8th and 9th weeks numerous ova were apparently laid in the liver. Almost every portal tract contained several ova embedded in the cellular infiltrate. Simultaneously numerous multinucleated giant cells appeared, and active phagocytosis of the ova took place (Fig. 3 and 4). The histological features suggested that from the 7th to the 13th week, ova were being continually laid in the liver, and were being systematically removed by the giant cells. It would appear that after the 14th week, no or very few ova were laid in the liver.

Bilharzial pigment could be seen in the Kupfer cells after 9 to 10 weeks.

At about the 14th to the 17th week the histological picture was that of an early granulomatous lesion (Fig. 5). The ova, with or without associated giant cells, were surrounded by a few endothelioid cells arranged in a concentric manner. Peripherally to this there was a zone of polymorphonuclear leucocytes, eosinophils, plasma cells and lymphocytes. Between the 19th and the 20th week almost all the portal tracts contained fully developed granulomata (Fig. 6).

From the 20th week onwards all the ova seen were dead and disintegrating.

From the 20th week to the 25th week the histological picture remained unchanged, and no definite increase of fibrous tissue in the portal tracts was evident.

The thymol turbidity, thymol flocculation and the colloidal red tests showed no deviations from the normal control values.

The cephalin cholesterol flocculation test became positive in the 3rd week in animal 1 and in the 1st week after infection in animal 2. These tests shortly thereafter reverted to negative. In a series of 14 monkeys studied by us, we found that 13 monkeys developed a positive cephalin flocculation test during the first few weeks after infection, which persisted for a short period only. These positive results occurred before any significant biochemical changes were evident, and even before the complement fixation test became positive. In a previous publication one of us (H. I. L.) showed that under experimental conditions the first and most reliable sign of bilharziasis was a positive complement fixation test. It will be observed too that in the 17th week post-infection in both test animals, the cephalin cholesterol test again became positive for a short period, and that in animal 2 the positive result coincided with the appearance of early granulomata.

The Takata-Ara reaction, apart from a transient weakly positive reaction in the 8th week in animal 1, became positive in both animals at the time that the biopsy specimen showed the presence of definite granulomata. In animal 2 it will be observed that this test became negative during the 21st to the 23rd week and again became positive in the 24th and 25th weeks, while in animal 1 the test which showed positive results in the 13th week remained positive during the entire experiment.

The gamma globulin levels showed a steady progressive increase, but no significant elevation occurred during the first 12 weeks. High levels were found to coincide with the appearance of granulomata in the biopsy specimens.

Maximum gamma globulin levels were found in both animals at about the 25th week.

The zinc sulphate turbidity test showed a steady increase from the low normal values in the controls to definite elevations at the end of the experiment. In the main, this test paralleled the gamma globulin values, but there was no definite correlation between the two tests.

Lipids showed no statistical significant variations and the pseudo-cholinesterase, apart from slight fluctuations, also showed no significant changes. It should however be noted that the initial cholinesterase levels were very low compared with human standards.

Alkaline phosphatase was raised in both animals at about the time of the appearance of granulomatous lesions, and the levels in each case at the 25th week were lower than those found prior to infection.

Jaundice was not evident during the entire period.

Albumin showed a significant decrease, and the lowest values were found in the 17th to 20th week period. With the decrease in the albumin, the globulin showed a progressive increase with a consequent marked deviation from normal in the albumin/globulin ratio. In each case there was more than a two-fold increase in the globulin levels.

There were no significant variations in the serum cholesterol in the early stages of the experiment; a slight drop in the level occurred at the time of the appearance of the granulomata, with a marked subsequent rise in both animals to very much higher levels than those of the control.

The percentage of esterified cholesterol to total cholesterol showed no significant changes.

The correlation of biochemical and histopathological changes are summarized in Tables 3 and 4.

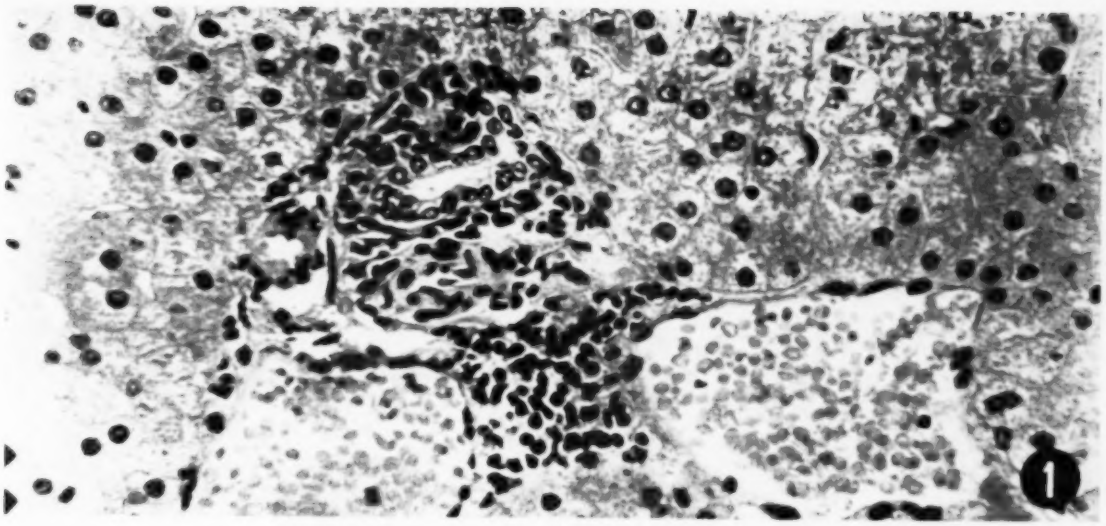
DISCUSSION

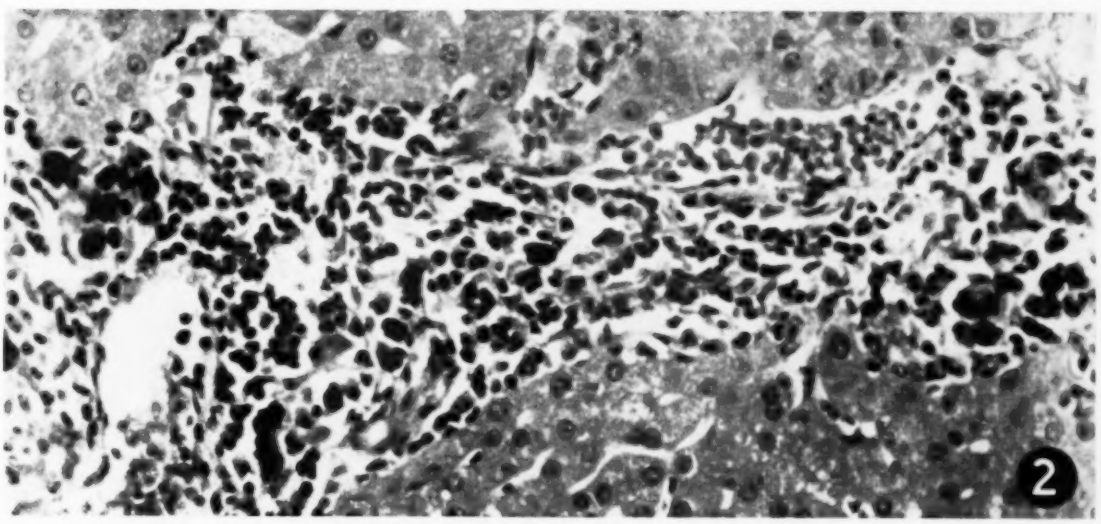
It is worthy of note that during the phase of the maturation of the schistosomules in the liver there is set up an

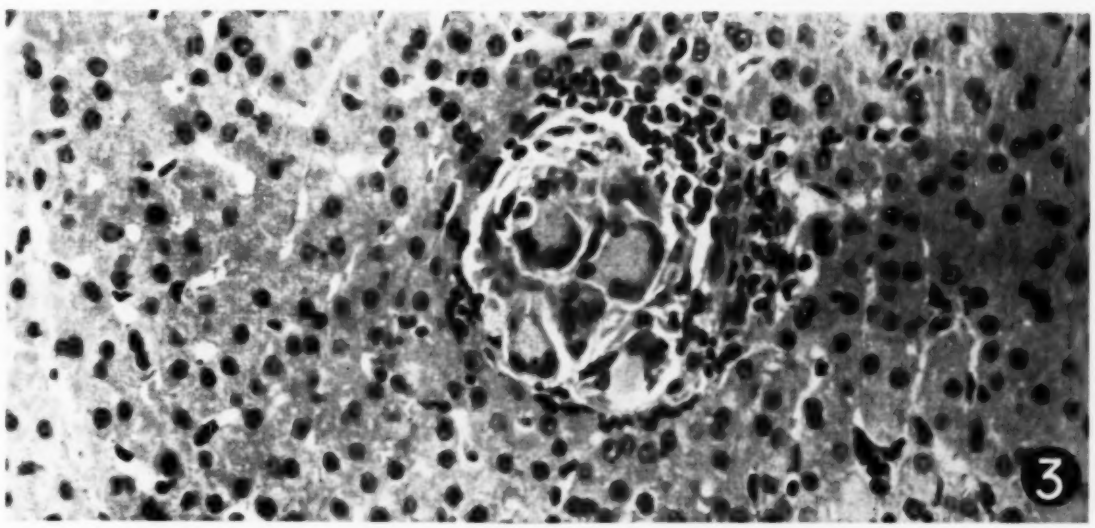
Fig. 1. Liver biopsy showing portal tract infiltrated by lymphocytes—2 weeks post-infection. (H & E × 530.)

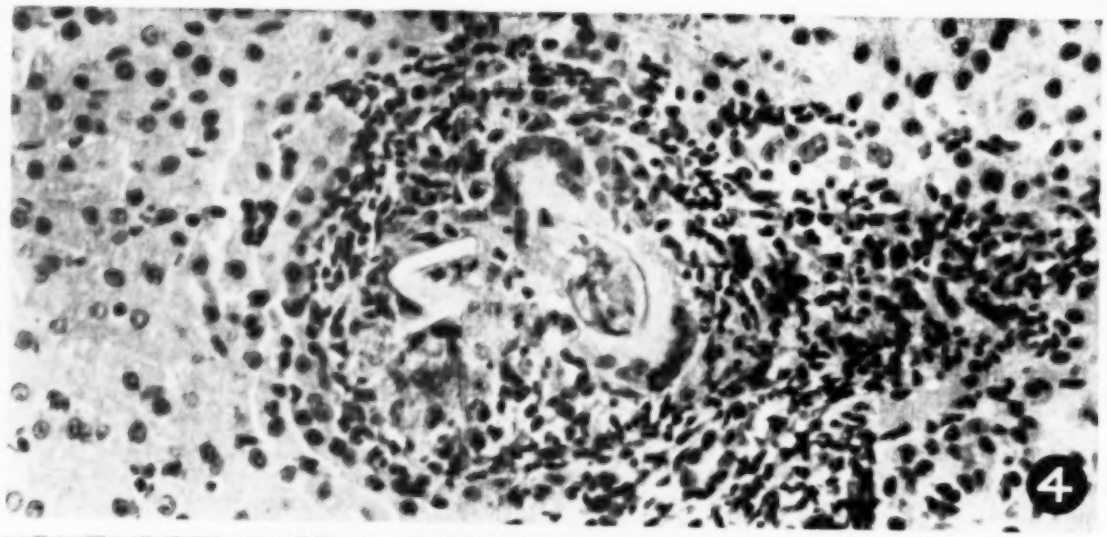
Fig. 2. Liver biopsy showing portal tracts infiltrated by inflammatory cells—acute hepatitis phase—5 weeks post-infection. (H & E × 530.)

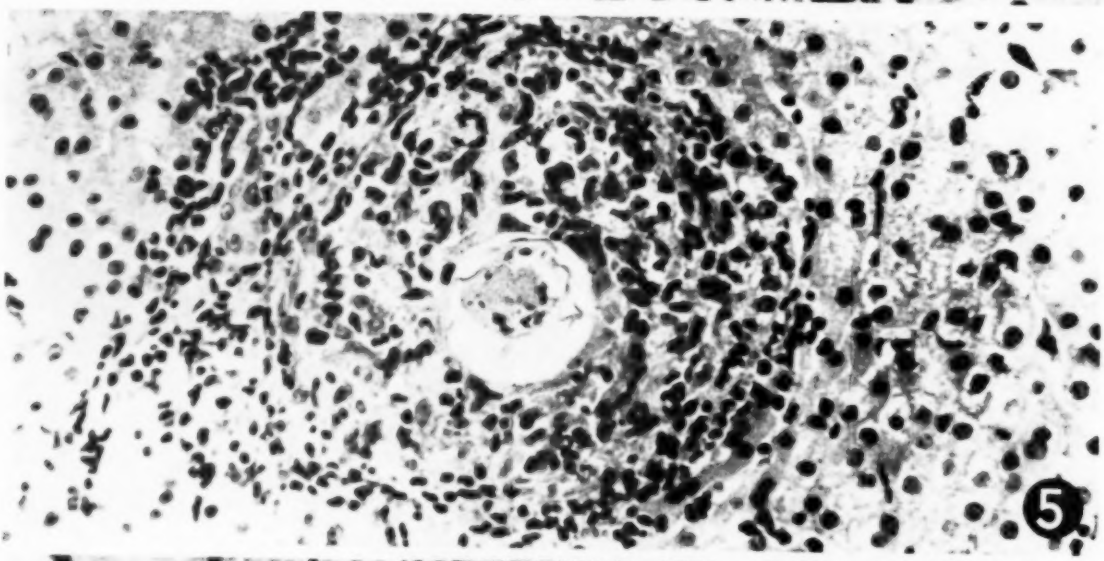
Fig. 3. Liver biopsy showing multinucleated giant cells in portal tract—8 weeks post-infection. (H & E × 530.)

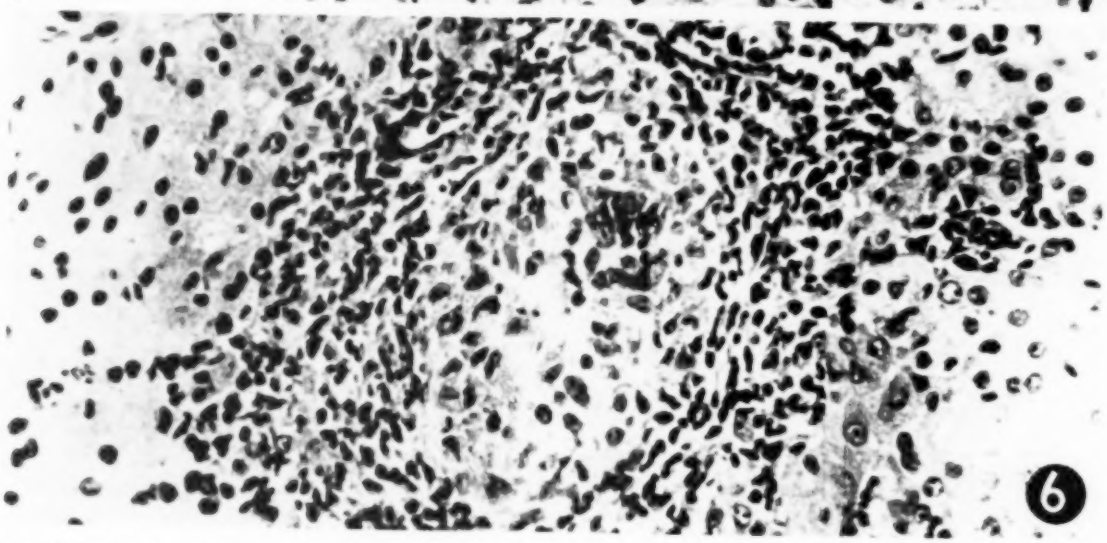












acute hepatitis. This finding has been confirmed by us in other monkeys and also in white mice.

Another most unexpected finding is that numerous ova are apparently deposited in the liver, even before they appear in the faeces. The presence of the ova stimulates a marked foreign-body giant-cell reaction, and the majority of the ova are phagocytosed and effectively disposed of. However, after about the 13th to the 17th week it would appear that the giant cells can no longer cope with the ever-increasing number of ova, and their presence then stimulates the formation of granulomata.

At the end of the 25th week, it was still not possible to state whether these lesions would completely resolve or whether they would progress to a fibrosis.

During the acute hepatitis stage and the phase of the depositions of ova in the liver no significant biochemical changes occurred. It was at the time of the formation of granulomata that biochemical changes occurred: these consisted in the main of a decrease in the albumin and a marked elevation in the globulin and gamma-globulin, with a consequent reversal of the albumin/globulin ratio.

The elevation of the globulin content, mainly due to a rise in the gamma-globulin, could possibly be explained on the basis of stimulation of the reticulo-endothelial system, but the decrease in the albumin level would suggest parenchymal liver damage.

The decrease in the cholesterol content could also be explained on the basis of liver damage, and the subsequent rise to high levels may indicate recovery of the parenchymal cells.

A further paper on the later stages of experimental bilharziasis is contemplated, and it is our intention also to observe the histological and biochemical effects on these test animals after subsequent reinfection with *B.bovis*.

TABLE 3: CORRELATION OF BIOCHEMICAL, CLINICOPATHOLOGICAL AND HISTOPATHOLOGICAL CHANGES (ANIMAL 1)

	Control	1 *Week*	3 *Weeks*	5 *Weeks*	6 *Weeks*	8 *Weeks*	13 *Weeks*	25 *Weeks*
Takata-Ara Reaction ..	Negative	Negative	Negative	Negative	Negative	+	++	+++
Cephalin Cholesterol Flocculation Test	Negative	Negative	++++	Negative	Negative	Negative	Negative	Negative
Albumin	3·7 grams	4·1 grams	4·0	3·6	4·0	3·8	2·9	2·2
Globulin	2·6 grams	3·6 grams	2·8	3·0	3·3	3·0	3·7	5·5
Gamma-Globulin	1·68 grams	1·47 grams	1·47	1·58	1·68	1·65	2·15	2·82
Zinc Sulphate Turbidity ..	9·0 units	9·8 units	12·4	14·0	16·6	14·4	16·8	18·2
Alkaline Phosphatase ..	27·6 units	29 units	24·5	35·5	29·5	30·2	29·2	24·6
Total Cholesterol	130 mgm.	113 mgm.	184·0	91·0	131·0	151·0	111·0	250·0
Bilharzia Complement Fixation Test	—	—	+	+	+	+	+	+
Blood Eosinophilia ..	—	—	—	+	+	+	+	+
Ova in Stools	—	—	—	—	—	+	+	+
Liver Biopsy	Very slight round cell infiltrate in portal tracts.	Very slight round cell infiltrate in portal tracts.	Portal tracts infiltrated by round cells, polymophonuclears and eosinophils.	Portal tracts infiltrated by numerous polymophonuclears and a few round cells. Slight fatty change.	Portal tracts infiltrated by numerous polymophonuclears and eosinophils and a few round cells. Scanty ova associated with foreign body giant cells.	Similar infiltrate but numerous ova associated with foreign body giant cells.	Definite granulomatous lesions surrounding ova. Abundant pigment.	Typical granulomatous lesions. All ova appear to be dead

Fig. 4. Liver biopsy showing phagocytosis of ova by giant cells—8–13 weeks post-infection. (H & E × 530.)

Fig. 5. Liver biopsy showing early granulomatous lesion—14 weeks post-infection. (H & E × 530.)

Fig. 6. Liver biopsy showing a fully developed granulomatous lesion—19–20 weeks post-infection. (H & E × 530.)

SUMMARY

1. Two monkeys were infected with *B.bovis* and weekly biochemical and histopathological studies were carried out for 25 weeks.

2. The earliest histological change was that of an acute hepatitis, followed by the deposition of numerous ova in the liver. This phase was followed by a giant-cell reaction, the phagocytosis and removal of the majority of ova, and later by the appearance of granulomata. No increase in fibrous tissue was observed.

3. Biochemical changes, especially involving protein metabolism, were observed to coincide with the formation of granulomata; certain of these changes suggest their being due to parenchymal liver damage, while others possibly reflect stimulation of the reticulo-endothelial system.

Our thanks are due to Drs. B. de Meillon and J. F. Murray for their continued interest, to Mr. Stoffberg and the staff of

TABLE 4: CORRELATION OF BIOCHEMICAL, CLINICOPATHOLOGICAL AND HISTOPATHOLOGICAL CHANGES (ANIMAL 2)

	Control	1 *Week*	4 *Weeks*	6 *Weeks*	8 *Weeks*	17 *Weeks*	25 *Weeks*
Takata-Ara Reaction	Negative	Negative	Negative	Negative	Negative	+++	++
Cephalin Cholesterol Flocculation Test	Negative	+++	Negative	Negative	Negative	++++	Negative
Albumin	4·1	5·0	4·2	4·2	4·3	2·8	3·0
Globulin	2·2	3·0	2·6	2·8	2·9	4·4	4·5
Gamma-Globulin	1·21	1·54	1·54	1·49	1·51	2·23	3·05
Zinc Sulphate Turbidity	8·2	9·8	9·8	9·4	10·0	24·6	18·8
Alkaline Phosphatase	11·6	13·5	12·2	16·5	12·8	20·8	9·1
Total Cholesterol	139·0	140·0	151·0	127·0	133·0	100·0	237·0
Bilharzia Complement Fixation Test	—	—	+	+	+	+	+
Blood Eosinophilia	—	—	—	+	+	+	+
Ova in Stools	—	—	—	—	+	+	+
Liver Biopsy	Very slight round-cell infiltrate in portal tracts.	Very slight round-cell infiltrate in portal tracts.	Portal tracts infiltrated by round cells and a few polymorphonuclears.	Portal tracts infiltrated by round cells and polymorphonuclears. Slight fatty change.	Portal tracts infiltrated by numerous polymorphonuclears. Few eosinophils and round cells. Numerous ova associated with foreign body giant-cells.	Portal tracts infiltrated by round cells, few polymorphonuclears and eosinophils. Some show definite granulomata in centre. Abundant pigment.	Typical granulomatous lesion. Ova appear to be dead.

the Liver Function Unit of the South African Institute for Medical Research for technical assistance, to Dr. Aimes for the micro-photographs, and to Dr. Bothwell for assistance with the liver biopsies.

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A CASE OF DARIER'S DISEASE

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The disease entity keratosis follicularis was first described by Morrow and a little later, in 1889, simultaneously by Darier and by White.[1] Darier thought that the peculiar round bodies (*corps ronds*) seen on histological sections were parasites and he called the disease psorospermosis. Later the name 'keratosis follicularis' was given to this disease but that too, although it has persisted, is a misnomer; MacLeod[2] in 1904 found most lesions to be interfollicular and Muende has written: 'Although these keratoses have always been described as follicular, my opinion is that this is not so, for serial sections of these plugs do not reveal any association with the hair follicles'.

Darier's disease is a progressive, chronic, papular erup-

tion, the papules after a time coalescing and becoming crusted and papillomatous. Eventually, fungating tumour-like formations appear, especially in the flexures. The papules erupt first on the head, face, chest, groins and loins and are usually capped by horny plugs, which, on removal, leave crateriform depressions. There may be seborrhoea-like crusting of the scalp, keratosis of the palms and soles, subungual keratosis and changes in the nails themselves. Occasionally small papules are seen on the mucous membranes. Malignant degeneration is extremely rare but has been described by Wende [3] in 1908 and by Charache [4] in 1937.

The etiology of Darier's disease is as yet unknown. Males and females are equally affected, and heredity has a great deal of influence. Darier thought it was a parasitic infection. Peck and others suggested that it was due to metabolic failure to absorb and utilize vitamin A [5] but Carleton and Stevens disagree with this theory.[6]

CASE REPORT

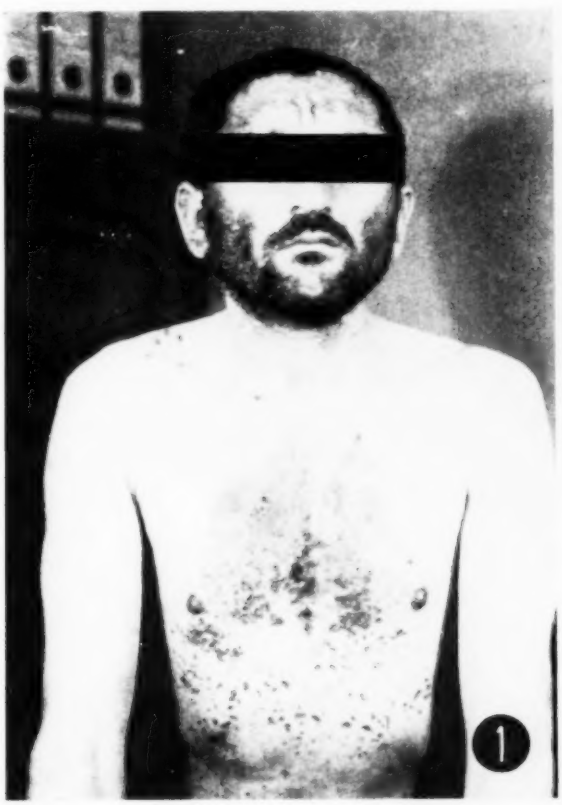
Mr. D. B., a Jew aged 64 years, born in Russia, was admitted to the dermatological ward of the Groote Schuur Hospital on 3 November 1951 from the dermatological out-patient department of the Cape Town Free Dispensary where he had been under constant observation since 1932.

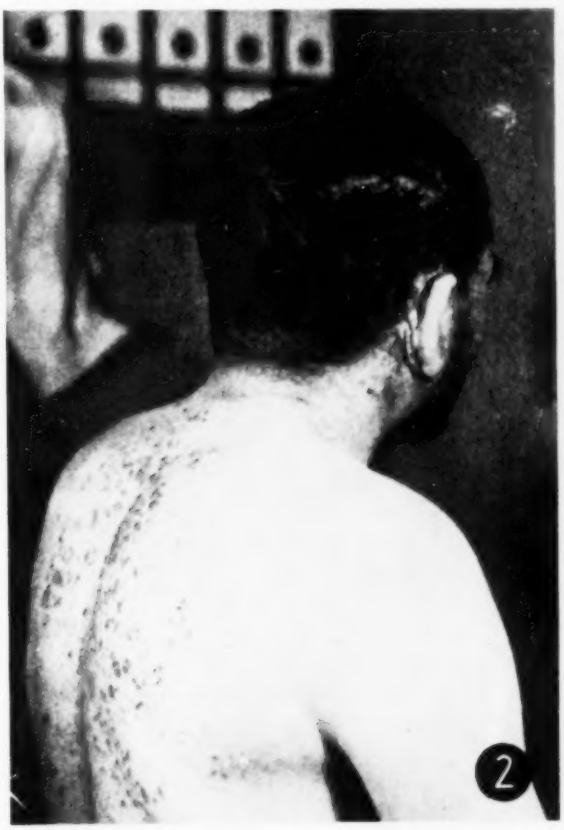
At about the age of 30 during the summer the patient noticed thickening of the skin behind his ears. There was a gradual appearance on the chest of small papules, each surmounted by a horny plug. The patient stated that during the winter months the lesions tended to disappear only to recur in the summer. This state of affairs continued for many years until from 1931 onwards there were no further remissions. Gradually these horny and warty lesions spread to the back, chest, neck, face, upper arms, thighs and groins (Fig. 1).

The lesions in and around the ears have become tumorous and by pressure on the external auditory canals, have led to progressive deafness associated at times with pain and tinnitus (Fig. 2).

His diet has always been well-balanced, his weight has remained more or less stationary and, apart from his dermatological complaint, his general health has always been good. No other members of his family have been similarly afflicted.

Previous treatment has consisted of the use of keratolytic ointments, large doses of vitamin A by mouth and X-ray therapy to the more thickened areas.





Figs. 1 and 2. Mr. D. B. in 1932; note the horny papules on the back and chest and the warty masses in the retro auricular folds.

He was admitted to the dermatological ward of the Groote Schuur Hospital mainly on account of the offensive odour emanating from the vegetating lesions behind the ears and in the groins. The intensity of the odour made it a trial to be in the same room with him.

There was nothing abnormal found on general examination apart from a soft basal systolic murmur and some enlarged, firm, non-tender inguinal and axillary lymph nodes. The liver was not enlarged and the spleen was not palpable.

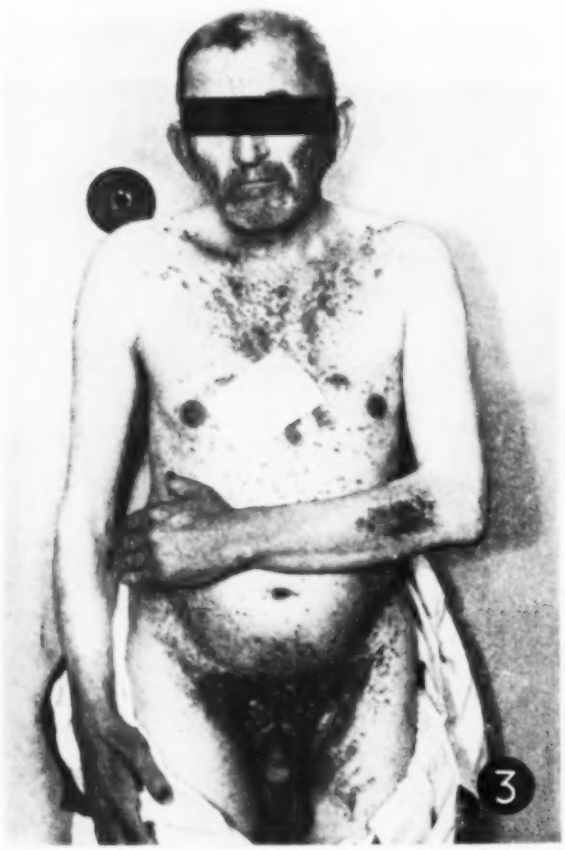
The neck, chest, upper arms, back and thighs were almost covered with light brown papules varying in size, most of them surmounted by horny plugs which, on removal, left cone-shaped orifices. On the left forearm and on the front of the chest the papules had fused to form large warty patches. There was no sign of loss of hair on the thickened scalp but there was an increased spacing of the individual hairs, which stuck out like porcupine quills. The skin of the face was thickened, rough and warty, making shaving difficult. The body was almost free from ordinary hirsutes and there were no hairs projecting from any of the papules. Behind the ears and in the groins were exuberant, fungating, warty masses from which emanated a very foul odour. The external auditory canals were completely blocked by hyperkeratotic skin (Figs. 3 and 4). The palms and soles were normal. All the nails of fingers and toes showed subungual hyperkeratoses. There were no lesions in the mouth apart from carious teeth.

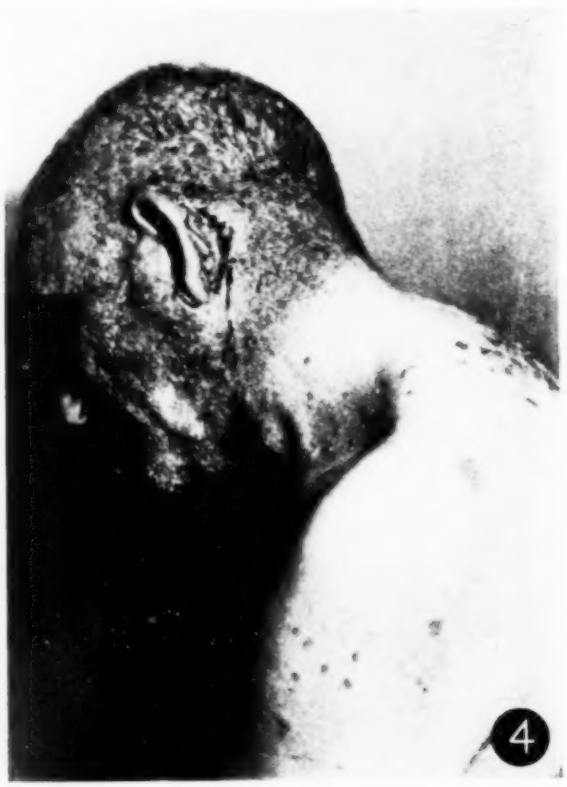
SPECIAL INVESTIGATIONS

Blood.
E.S.R. 24 mm./hour (Wintrobe).
Haemoglobin 16 gm. %.
P.C.V. 50%
Erythrocytes 5,380,000 per c.mm.
Leucocytes 8,720 per c.mm.
Polymorphs 75%.
Lymphocytes 22%
Monocytes 1%.
Eosinophils 2%.
Wassermann and Berger tests negative.
Serum carotene 100 mg. %.
Liver function tests:
Thymol turbidity: 1.
Colloidal gold: 0.
Thymol flocculation: 0.

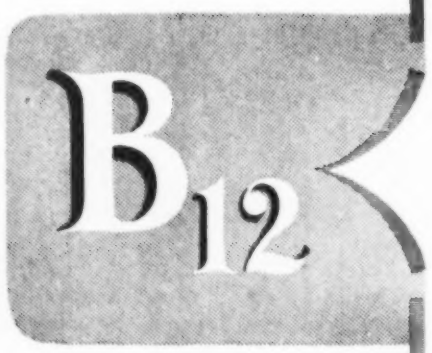
The Ear, Nose and Throat report stated that the deafness was due to occlusion of the external auditory meati.

Histology. The histology was typical of Darier's disease. There was a large hyperkeratotic plug in the shape of a





Figs. 3 and 4. Mr. D. B. in November 1951. Note fungating masses in groins and posterior auricular folds: sparse hairs resembling porcupine quills on scalp and beard areas.



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'50' (50 micrograms): bottles of 25
Liquid (25 micrograms per fluid drachm): bottles of 6 fluid ounces

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cone, the vertex pushing down the basal layer of the epidermis. This plug contained many nucleated cells. There were parakeratosis, dyskeratosis and acanthosis with elongation of the *rete* pegs. In the prickle-cell layer were several lacunae containing *corps ronds*. There was a mild perivascular cellular infiltrate in the upper cutis. This picture was not associated with a pilo-sebaceous follicle.

COURSE AND TREATMENT

During the 6 weeks the patient spent in the ward he was put on massive vitamin A therapy consisting of 300,000 units intra-muscularly 3 times a week and 150,000 units daily by mouth. During the course of this treatment a fine reddish papular rash appeared on the extensor surfaces of the arms and forearms, which gradually progressed to resemble the lesions elsewhere on the body. X-ray therapy failed to influence the fungating masses in the posterior auricular and inguinal regions. The odour was partly controlled by frequent potassium permanganate baths and eusol wet dressings; chlorophyll powder and ointment were of no value.

Deterioration has continued since his discharge from the ward in spite of the onset of cold weather and the use of hypertonic saline baths[7] (Figs. 5 and 6).

SUMMARY

Darier's Disease (keratosis follicularis) is briefly described and a report is given of a case who has been under observation in Cape Town for 20 years and who actually underwent more rapid deterioration whilst on massive vitamin A therapy than at any other time. We decided to publish this case because of this relapse and the degree of involvement of his skin.

We express our thanks for his kind co-operation to Dr. R. Lang, Head of the Department of Dermatology at the Groote Schuur Hospital, and to Mr. B. Todt for the excellent photographs.

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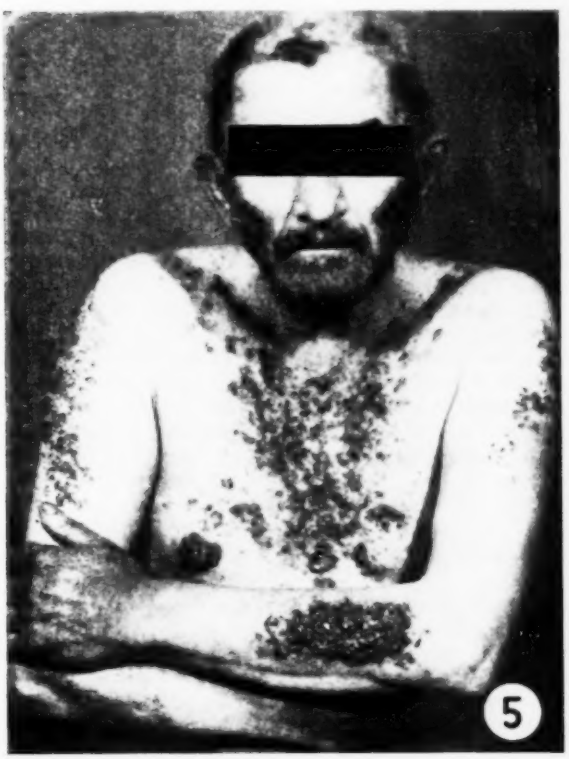

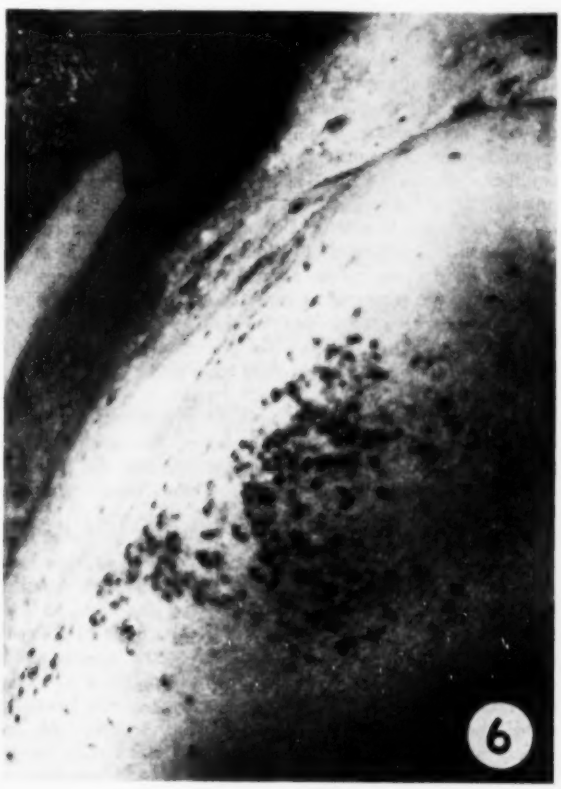

Figs. 5 and 6. Mr. D. B. in June 1952. Note extensive new involvement of forearms and upper arms following massive doses of vitamin A.

POST-TONSILLECTOMY PAIN

PHILIP MEYRICK
Pietermaritzburg

The relief of pain in the post-operative period after tonsillectomy has for long been a difficult problem.

Children under the age of 14 years usually suffer little or no pain and it is seldom necessary to give anything more than the routine post-operative sedation. Adults over 18 years suffer a considerable amount of pain for a week or more. Many patients have stated that they suffered more pain from tonsillectomy than from a major abdominal operation. This statement may be true but it must be treated with reserve.

In the age group 14–18 years there is wide variation. Some suffer no pain, while others have a large amount. Each case in this group must be treated on its merits.

CAUSE OF THE PAIN

It is of interest to assess the origin of the pain after tonsillectomy. It is true that there is a large raw area in the pharynx, but because it contains few nerve endings it cannot be the major source of the pain. After adenoidectomy there is a large raw area on the posterior wall of the nasopharynx. I do not recall a single complaint of pain after adenoidectomy unaccompanied by tonsillectomy.

The pain after tonsillectomy must arise from the muscles of the fauces, palate, and lateral pharyngeal wall. Injured muscles react by going into spasm. A muscle in spasm produces pain of a severe degree, as is seen in the abdominal wall after laparotomy and in an amputation stump.

One has been struck by the almost complete absence of post-operative pain in all the cases of abscess tonsillectomy that we have done. This amounts to some 250 cases. In these cases the pharyngeal muscles are extensively infiltrated with inflammatory oedema and partially paralysed. This infiltration of the muscles prevents their going into spasm, as is seen in the 'cold' case of tonsillectomy.

The cause of post-tonsillectomy pain is damage to the surrounding muscles by the operator. It is inevitable that some degree of trauma be produced, because it is not practicable to do a microscopic dissection of the plane of cleavage between the capsule of the tonsil and the surrounding tissues.

An operator who is neat and rapid in his work will produce less tissue trauma than one who is slow and inexperienced. Swabs should be used as little as possible in the control of bleeding. Massaging the tonsillar bed and pillars with gauze swabs can only be deprecated. An adequate suction apparatus is infinitely better and saves the expense of gauze. In the picking up and ligation of bleeding points only the smallest necessary amount of tissue should be included in the forceps. That design of forceps which picks up half of the tonsillar bed is bad, and should be avoided. The Negus size A forceps is very satisfactory. The number of tonsillectomy instruments offered to surgeons is enormous and many advantages are claimed for each type. None of these advantages can offset the fundamental need, viz. skill and care on the part of the operator.

The tongue is often a source of pain in this operation of tonsillectomy. The tongue plate of the Davis-type gag tends to compress the tongue against the mandible and considerable interference with the circulation can ensue. If the operation be long the tissue of the tongue can suffer serious damage in this way and be the source of considerable pain subsequently.

RELIEF OF THE PAIN

Relief of post-operative pain is sought through the medium of drugs. Morphia is ideal in the immediate post-operative period and this is followed by pethedine after the first 24 hours. Local applications have been used extensively. They are usually of the local-anaesthetic lozenge type. Their value is doubtful because the tendency to anaesthetize the buccal mucosa produces considerable discomfort while the basic pain of the tonsillectomy is unaffected. In the author's experience the majority of patients have preferred not to use such lozenges.

Insufflation of various types of powders to the raw areas is also practised, but the degree of relief of pain is seldom satisfactory as they cannot strike at the cause of the pain, namely the muscular spasm.

Aspirin in the form of a powder in honey or incorporated in chewing-gum is widely used for relief of pain. Provided the aggregate intake of aspirin is regorously restricted, there is no real risk. Any excess of the drug will lead to lowered prothrombin level and the risk of serious secondary haemorrhage. These remarks apply especially to those cases of rheumatic fever which are being treated with salicylates and to patients who have easy access to drugs. Aspirin in any form is difficult to control in an institution. The author feels that it is safer to prohibit the use of the drug so that there can be no overdosage.

The haemorrhage associated with salicylates is usually very severe, and can only be controlled by raising the prothrombin level. Fortunately this is easily done, and intravenous vitamin K has the dramatic effect of stopping the bleeding immediately.

For several years a policy of encouraging the patients to eat, and in particular to chew, has been followed. The morning after operation all patients are given a slice of dry toast with the injunction 'Chew it, but you need not swallow'. If the patient chews he always swallows because when chewed the food is soft. This procedure does two very important things. In the first place the saliva flow is stimulated, and this, together with the mechanical process of chewing, does much to clean up the mouth. Secondly, the chewing and swallowing gets the pillar and palate muscles moving, and much of the spasm is relieved.

Local anaesthetics used at the time of operation are of little value because of the shortness of their action.

Intravenous procaine has been found to be successful in other spheres in the relief of pain. In tonsillectomy it was found that the drug could not be given in a time commensurate with the length of the operation. There were also reports of alarming side-effects. It was decided not to pursue the technique.

EFOCAINE

A few months ago the greatest advance in this field took place. This was the introduction of a long-acting anaesthetic marketed under the name Efocaine. This is a preparation of procaine which when injected into the tissues deposits minute crystals of procaine. The solid procaine is absorbed slowly into the tissues, and has an anaesthetic effect for 6 to 10 days.

The use of efocaine is simple and the degree of relief of pain is very high. Some patients have complained of only the very slightest discomfort.

The technique in use at present is to inject a total of 2 c.c. into the muscles of the pillars, tongue and palate, after the removal of the tonsil on each side. A fine needle 6 inches long is sunk into the tissues and the injection made slowly, as the needle is withdrawn. This is repeated at the lower pole, posterior and anterior pillars, and the palate. No untoward effects have been noted in some 40 cases. Patients are able to eat a full normal diet on the first post-operative day, and have not required any general sedative for the relief of pain. In several cases it has been noticed that there has been an appearance of pain on the 4th or 5th day and it is considered that this is because the amount of anaesthetic deposited has been insufficient. A few cases have shown little or no relief of pain. This is due, it is felt, to a failure of technique in depositing the efocaine into the muscles.

SUMMARY

1. The origin of post-tonsillectomy pain is discussed.

2. The common agents in current use for the relief of pain after tonsillectomy and some attendant dangers are described.

3. The use of the new long-acting anaesthetic efocaine is described.

THE TRAINING OF DOCTORS

MODERN TENDENCY TO CONSIDER THE ILLNESS BEFORE THE PATIENT

BY R. S. VERSTER, F.R.C.S.E., ARTS (HOLLAND)

Bloemfontein

This is a confession of failure, and if any reader sadly recognizes his picture between these lines, let him not be discouraged: it has taken me nearly 25 years to discover that I have been blindly following a course mapped out by eminent teachers who put more stock in scientific achievement than in understanding a man's soul.

If you are satisfied with your profession and lucrative practice I beg your forgiveness. Please desist from reading this confession for you will only waste your precious time.

As one who, in a limited way, has participated in the examining and teaching of our future medical men, I am getting more gravely perturbed by the results of that same assiduous teaching. We are pushing medical graduates into the world with an array of scientific knowledge so fantastic that it makes us old timers look sheepish. Ours is an age of experts, each trained in a particular part of a complicated whole. We acknowledge the value of detailed research in medicine, but we must face the danger of getting lost in details. We must be aware of the error of seeing the whole merely as a sum of its parts. A human being is something more than a sum of our medical specialties. But that is not what we are teaching our young doctors.

Proud of the wonderful achievements in our work, we try to impress on them both by teaching and by fear of examination the importance of new medical data. We are putting such a premium on scientific medical knowledge that we have forgotten the patient. It is his serum-globulin, his ketosteroids or his acid-phosphatase that we are concerned with and not his background. When he quivers or sweats from one anxiety-state to the next, the only thing that worries us, is that this „serial number X" does not fit into the clinical pattern we formed at University. If he is chronically tired or suffers from a continuous backache he is passed off as a neurotic because the X-rays, E.C.G., blood count, etc. show no abnormality. We simply don't believe in a complaint which we cannot put through the mill of test tubes, slides, X-rays, etc. Of course not—it would be infra dig. Have we not long since passed the stage of the Victorian old family doctor who tried to hide his lack of medical knowledge by sitting unperturbedly at the beside of his patients?

The nett result is that the old family doctor is being pushed into the background more and more and his place even in the country dorps is being taken by smart specialists. Oddly enough, quackery still seems to flourish and people still talk about 'the good old family doctor'.

WHY DOCTORS ARE SLANDERED

Now why do some patients get so much glee from slandering doctors? Why do they go from one doctor to another, ultimately to confide their troubles to some quack who gives them the healing which they crave for? The answer is obvious: doctors have been taught to consider disease as an affliction of the flesh. The quack is wiser—he knows that half the world's sickness is of the mind and not the body. Where we have failed is to impress on students the importance of the mind's influence on the body. We are still labouring under the shadows of Virchow's 'Organ pathologie', and we have not yet grasped the importance of Dr. Hans Selye's 'Stress Theory'.

But for all his streamlined machinery, his miracle drugs, his surgical skills, the doctor can find no help for half the sufferers that come to him for help. He cannot even discover what is wrong with them. Their complaints do not fit into the pattern which has been taught. Mindful of the 'really sick' who need him, he declines to waste his time with these 'imaginary ill'. With a 'Forget it—pull yourself together—its only your nerves' 'take a holiday' or with a prescription for some vitamines or sleeping pills the poor sufferer is sent on his never-ending quest.

The 'hypochondriac', as he is fondly labelled, soon turns up in another doctor's office with the same or a new set of symptoms, simply because we have not taught our medical students the influence of the mind on the body.

The following extract from a letter of a disappointed patient who, at the end of his tether, now appeals to the Red Cross Society for comfort and help, may prove the point: 'Nadat

hulle 'n gemors van my operasie gemaak het, het die volgende al by my gorrel af verdwyn:

Penicillin inspuitings, 6 miljoen eenhede in 8 uur, *Terramycin, Streptomycin, Chloromycetin*, 90 prostaat pille, *Sulphadizin* 70, *Sulphatriad* 85, *Methyloids* 160 pille, *Santal Wood oil* 100, *Pyridium* 500, *Sodium Salicylate* 1,200, *Mandelix* 2 bottles, *Butazolidine* 80, *Veinoids*, 100, R 12–50, *Cortisone* inspuitings, *Prontosil rubrum* 100 en nog talle meer waarvan ek die name al vergeet en die bottels weggegooi het'.

'DYING IN PERFECT HEALTH'

It is like the story of Forain, the French painter, who became ill and was examined by half a dozen specialists. The heart specialist pronounced his heart in good shape, the lung specialist declared his lungs to be fine, the kidney specialist reported that his kidneys were functioning properly, and so on until Forain broke in: 'Then, gentlemen, it seems that I am dying in perfect health!'

Dr. Hutschnecker says: 'Illness of the body is more than merely physical distress. Illness is not only a malfunctioning organ or a diseased one. Illness is an outer expression of a deep and dangerous destructive force at work. Illness is an S.O.S. from the ship at sea with a fire raging in the hold.

'The man whose illness is of the body has not given up. He may surrender organ after organ to disease, as a retreating army surrenders town after town. He may give up step by step, his capacity for active living. He is fighting, but it is a losing battle. He turns to the physician for help, only to find too often that the physician is as helpless as himself.'

All the eminent teachers of medicine have recognized this. That is what prompted Sir William Osler to declare: 'What happens to a patient with tuberculosis, depends more on what he has in his head than what he has in his chest.' Substitute practically any well known disease for 'tuberculosis' and we get a much clearer picture of human ailments.

With the old-fashioned doctor it had been a virtue to make do with little, to depend on his sharpened observations and his experience with people sick and well, and his knowledge of his patient in particular. The new scientific man, the specialist, approaches a case with an arsenal of equipment. He sees not a sick man but a sickness, and treats an organ and not a suffering human being.

Describing the traditional 'grand rounds' of the hospital Dr. Carl Binger, in his book *The Doctor's Job*, says: 'Is it scientific medicine to consider his liver or his bone marrow and not him (the patient)?'

PHYSICAL SIGNS OF MENTAL CONFLICT

Are we not accessary to the criminal fact of wasting too much of our precious time and of the still more precious money of the patient by treating him for his ulcer or by treating her for her backache or chronic tiredness which no amount of tonic can cure, without recognizing that these are only physical signs of an undecided mental conflict? And are we not deceiving ourselves by proudly acclaiming the wonders of surgery? For a sick man will follow anyone who promises a way out of his misery. And many a sufferer, as Menninger and others have pointed out, will willingly, even eagerly place himself on the altar of the operating table and sacrifice a part of his body to the terrible feelings of guilt which unconsciously dominate him.

This explains the strange phenomenon of surgical fashions. In the past it was appendicectomy, tonsillectomy, nephropexy and ventral suspension (for backaches) and a fallopian tube or two thrown in for good luck. Now the furore is hysterectomy and gastrectomy, dilatation of ureters, etc. Have the ulcers grown so much more malignant that we remove a man's stomach prophylactically to rob it of its chance to form an ulcer, if ever?

Every doctor can draw out of his files cases of unnecessary operations. Some of these unhappy sick have had it by the dozen (and not cheaper by the dozen this time). Why all this waste of energy and working hours? Dr. Alexander, a psychoanalyst, states the case eloquently: 'The fact that the mind rules the body is, in spite of its neglect by biology and medicine, the most fundamental fact which we know about the process of life.'

I do not minimize the need for pure scientists in medicine, for research men whose intellectual gifts can make enormous contributions to the world's health, and for general surgeons to perform the necessary plumbing service when any of the numerous hollow tubes of the human get blocked. But medicine is not a business. It's a service. We must try to bolster the doctor–patient relationship by restoring the dignity of the general practitioner. This we can achieve only by impressing on our young men that they have got to deal with human beings and that no amount of reports on X-ray examinations, blood-chemistry, graphs and indices, etc., etc. can make up for the human touch.

CURRICULUM CHANGES SUGGESTED

To achieve this I would propose that we cut the medical curriculum by at least one year. This would be easy, for anyone will agree that the unnecessary detail we learn for examination purposes only, and not for practical use, fills more than one year's training. This year should be devoted to the study of psychosomatic medicine and a book like Dr. Hutschnecker's *The Will to Live* should be one of the student's close companions.

It is not for me to state where the change should be made, but a committee of practical men appointed by some authority, as for example our Medical Association or the Medical Council, could produce a more practical curriculum.

At the risk of being branded as a heretic I would propose to drop the 1st-year botany and a good deal of the anatomy detail and pathology in the subsequent years. We are past Virchow's age. The time thus spared could not be better used than by apprenticing the young doctor to an experienced and worldly wise general practitioner or to an experienced member on the honorary staff of one of our bigger institutions.

The student must be taught that psychotherapy is just as effective and positive a therapy as giving the patient a pill or an injection. Post-graduate courses to 'indoctrinate' on these lines doctors already out in general practice have been started overseas, and out of such promising experiments the future of the general practitioner emerges as far more satisfying than it has ever been. He will find that he is doing a better medical job. His insight into the patient's personality and the background of the case will guide him in his purely medical therapy. He will attach his patients more securely to him. He may win back to medicine the lost sheep who have wandered to 'healers' for understanding.

He will work better at less emotional cost to himself. He will be spared most of the irritation, frustration, even anger, which a patient's bad behaviour formerly aroused in him and which he forced himself to suppress. Understanding the causes of such behaviour, he will became more objective. In the end the humanized approach will also give the doctor greater economic security, for a practice grows and flowers on trust. Both the patient and the doctor will have everything to gain.

NEW PREPARATIONS AND APPLIANCES

A QUATERNARY AMMONIUM COMPOUND

Centuries ago, extracts of the plant deadly nightshade, which Linné later called *Atropa belladonna*, were used by Italian noblewomen for the dilating effect the alkaloid produced on the pupils of their eyes.

Atropine, the first pure alkaloid of belladonna, was isolated by Mein in 1831. It is an extremely powerful anticholinergic agent. The definite and predictably troublesome side-effects which attend its use have prompted the continuing search for equally effective but less toxic preparations.

In the attempt to prevent or reduce the severity of what are erroneously referred to as 'side-effects', synthetic homologues of atropine have been investigated. In this group,

tertiary amines have revealed interesting pharmacologic properties, but it is becoming increasingly evident that the quaternary ammonium compounds have even greater anticholinergic activity.

'Elorine Sulfate' (Tricyclamol Sulfate, Lilly) is a quaternary ammonium compound described chemically as 1-cyclohexyl-1-phenyl-3-pyrrolidino-1-propanol methsulfate. It is a potent and dependable parasympathetic blocking agent which is effective orally. Acting as an anticholinergic drug, it inhibits neural stimuli at those ganglia and effectors where the transmission of stimuli is mediated by acetylcholine.

It is indicated in the treatment of functional and organic conditions in which spasm of the gastro-intestinal tract is a prominent factor. Common examples are conditions characterized by hypermotility and hypersecretion, whether organic lesions (peptic ulcer, ulcerative colitis, regional enteritis, and acute gastro-enteritis), or functional conditions, e.g. irritable colon (mucous colitis, spastic colitis).

The principal therapeutic application of 'Elorine Sulfate' depends upon its pharmacologic ability to block vagal (parasympathetic) stimulation of the smooth muscle of the gastrointestinal tract. It also reduces the secretion of saliva and of gastric, pancreatic, and intestinal juice. It antagonizes the action of parasympathetic stimulants on isolated uterine muscle but not the effect of posterior pituitary extracts. Similarly, it antagonizes the inhibitory activity of the vagus nerve on the heart.

Side-effects appear to be related to dosage. Those that have been observed are ones that would be expected with a drug that inhibits the end organs of the parasympathetic nervous system: dryness of the mouth, blurring of vision, and (rarely) urinary retention. With the usual recommended dosage, side-effects occur in a minority of patients and can be controlled by reduction in dosage. Only in rare instances should it be necessary to withdraw the drug completely.

The drug should be avoided in those conditions in which inhibition of the parasympathetic nervous system is undesirable.

It is effective by mouth and is currently administered only by that route. It is recommended that the starting dose should be 50 mg. in the average patient and that this be increased until a therapeutic effect is obtained or side-effects appear, to a maximal dosage of 200 mg. four times a day. Likewise, the frequency of administration may be altered, generally within the limits of four and eight hours.

ASSOCIATION NEWS : VERENIGINGSNUUS

EMERITUS MEMBERSHIP CERTIFICATE PRESENTED TO DR. A. HAY-MICHEL BY BORDER BRANCH

At a meeting of the Border branch at Stutterheim on 29 August, 24 members were present.

It was proposed by Dr. Wagner, seconded by Dr. Alabaster and carried unanimously that we, as a Branch, had no objections to nurses being taught analgesia.

It was proposed by Dr. Hay-Michel, seconded by Dr. Marais, that the Celsius Scale should be brought up by the Department of Education so that children can be trained in the metric system. It was also suggested that we should have the Celsius and Fahrenheit Systems on the same thermometer (dual graduation) and that the whole matter should be left to the discretion of the medical man in charge. This was carried with one dissenting vote.

On the question of Aseptic and Antiseptic procedures the Queenstown Division agreed that the spread of infection by thermometers is a minor cause of infection in hospitals, except in infectious cases. The Division accepts the present arrangement and cannot see the necessity for each patient to be furnished with his own thermometer.

The meeting agreed with these views but felt that in Native Wards infection can be passed in this manner, though it would be ideal for each patient to have his own thermometer.

After the meeting, members joined their wives at an informal dinner at which the certificate for Emeritus Membership was presented to Dr. A. Hay-Michel by the President, Dr. A. H. Louw. In doing so, he paid tribute to Dr. Hay-Michel's sterling services both to the Medical Profession in general and to the M.A.S.A. in particular. Dr. Hay-Michel, he said, was largely responsible for the formation of the first Division of the Medical Association of S.A., at Queenstown. As a doctor, too, he had earned much respect for his work and as a man was most popular with both his colleagues, patients and friends.

These remarks were heartily endorsed by Dr. Wagner who stated that he, too, had known Dr. Hay-Michel for many years and he agreed that this award was a well-merited one for the good work he had done.

Dr. Alabaster associated himself with the remarks previously made, told of his association with Dr. Hay-Michel at various times over a very long period and quoted examples of the good work Dr. Hay-Michel had done.

Dr. Alexander told Dr. Hay-Michel that his nomination for election to this honour was well received by Federal Council and that the award was a unanimous one.

In reply Dr. Hay-Michel said: 'In acknowledging Federal Council's award of Emeritus Membership, I am deeply conscious of my indebtedness to you, Sir, and members of the Border Branch for your goodwill and generosity, which can be my only justification for the honour it confers. However humble a part one may have taken in helping to establish an autonomous S.A. Medical Association, I feel we wrought better than we thought and forged a human instrument that has enabled us to reconcile the worst of our differences and difficulties without feelings of rancour or malice.

'In addition it has done more to promote a better knowledge, understanding and unity among the white sections of our scattered communities than any other profession, calling or political organization; not even excepting the numerous Christian Churches of the country.

'And lastly, though perhaps of even greater importance, because of the humanitarian nature of our occupation, and more intimate contact with the primitive, physical and nutritional ills and deficiencies of the many native tribes and Oriental immigrants, who together constitute the huge majority and most difficult problem of government of our multi-racial population, the Medical Association of South Africa is destined to play an increasingly responsible rôle in promoting the health, prosperity, peace and national security of the four provinces that comprise our somewhat loosely bound Union of to-day.

'On behalf of the Border Branch I would like to take this opportunity of paying a tribute to the memory of Dr. Karl Bremer, late Minister of Health in the present Government. It will not be easy to replace so loyal, just and wise a friend of our Medical Association. Mr. President, Mrs. Jackie Louw and Members of the Border Branch, I thank you with all the warmth and sincerity I can command.'

MEETING AT EAST LONDON

At a meeting of the Branch held at East London on 15 May at which Dr. A. H. Louw presided and 26 other members attended, Mr. I. Barnat, thoracic surgeon of Durban gave an address on the scope of thoracic surgery and described the conditions treated by surgery to-day. Illustrating these with first-class X-ray plates he gave a thorough, concise and clear account of the various conditions, pre-operative treatment, the operation, post-operative treatment and prognosis in each case.

Dr. Louw expressed his own appreciation of this magnificent effort by Mr. Barnat, and after many questions had been put to Mr. Barnat and satisfactorily answered, Dr. Wagner proposed a vote of thanks which was carried unanimously.

Dr. R. J. P. Melvin, chairman of the East London Division on behalf of the Branch then made a farewell presentation to Dr. F. A. Nicolai.

Dr. Nicolai, he said, was organizer of C.O.M.O. (Commis-

sion of Medical Organization), Past-President of the Division and a very active member. He had been held in very high esteem both by his patients and colleagues. In asking him to accept the presentation of a table clock, he did so on behalf of the members of the East London Division as a token of their great esteem and with their best wishes for the future.

In replying, Dr. Nicolai said: 'I thank you very much for this extremely valuable and very lovely token of your friendship. Although valuable—this tribute of esteem and affection is something that sinks into insignificance when compared with the fact that I have your confidence, friendship and esteem. I have had great happiness and kindness due to my colleagues and it has been a privilege to have been associated with them. I have taken as my example the late Drs. Nesbitt, Tremble, Adams and Ferguson, who will remain in my mind as perfect gentlemen. My thanks are coupled with those of my wife and I much appreciate the mention of her.'

Dr. Alabaster then proposed the toast of Dr. and Mrs. Nicolai and the meeting responded with gusto.

Correspondence:

1. Amendment to Rules: 'That By-Law 7 (e) be amended by the deletion of the words "final clinical year" and the subsitution by the words: "three clinical years".' Agreed.

2. Letter re Consultations: This was noted and the Secretary was instructed to inform the Medical Secretary that the feeling of this Branch was that if the patient asks for a partner to be called in, it is permissible to charge, otherwise it is not allowed.

3. Letter re unethical behaviour with reference to an order from a Magistrate or District Surgeon as to treating a patient who is under treatment by another Doctor. Dr. Wagner stated that these were *pro Deo* cases who probably would not pay in any case and would go to the Magistrate for free treatment. A Magistrate's order must be obeyed and the matter of ethics was not involved.

CAPE TOWN PAEDIATRIC GROUP

The Cape Town Paediatric Group were on 2 October the guests of the Superintendent and Staff of the City Hospital for Infectious Diseases.

Members enjoyed a most instructive discussion by Dr. Ackermann on some of the problems of tuberculosis in childhood and in particular tuberculous meningitis. Dr. Gaut gave an excellent address on 'Virus Laryngitis' proving the exceptional therapeutic results of the management of this condition at the City Hospital.

The next meeting of the group will be held at the Falconer Lecture Theatre at Groote Schuur Hospital on Friday, 6 November, at 8.15, when Mr. Alexander Graham will discuss the treatment of 'Congenital Pulmonary Stenosis and Atresia'.

All interested practitioners are cordially invited.

ANNUAL GENERAL MEETING OF THE ASSOCIATION AND FEDERAL COUNCIL MEETING, KIMBERLEY

A meeting of the Federal Council was held in the Technical College, Kimberley, on Thursday, Friday and Saturday, 15–17 October 1953, and was attended by 40 members.

It was preceded by the Annual General Meeting of the Association, when about 45 members of the Association were present and Dr. L. I. Braun, the retiring President, took the chair. Dr. J. S. du Toit, Honorary Treasurer, presented the financial statement for 1952, which showed that the expenditure had exceeded the revenue by £1,577.

Dr. du Toit also presented the annual accounts of the Benevolent Fund, which showed an income of £4,355, an expenditure of £2,073 on benevolence and an addition of £2,837 to the Fund.

The Annual Report of the Chairman of Federal Council (published in the *Journal* of 15 August 1953) was taken as read.

Dr. Braun inducted the new President, Dr. J. P. Collins, and in doing so expressed his appreciation of the great honour that had been done to himself and the Southern Transvaal Branch by his own election to the office. He spoke of Dr. Collins in the highest terms.

Dr. Collins addressed the meeting on taking the chair. He mentioned that he had been born in Kimberley and had practised there ever since qualifying.

Dr. A. W. S. Sichel proposed a vote of thanks to Dr. Braun, who he said had been an ornament to his office. He was an energetic and devoted member of the Association, never refusing any service imposed on him. His year of office had been most successful and the Association was fortunate in having a President of his calibre.

FEDERAL COUNCIL

Dr. A. W. S. Sichel, Chairman of the Council, presided at the Federal Council meeting. He mentioned that the first Medical Congress in South Africa had been held in Kimberley in 1883.

Eleven proxies were presented.

Many important matters came under consideration. Morning and afternoon sessions were held on Thursday and Friday, a night session until nearly midnight on Friday, and a morning session on Saturday.

Amongst the matters dealt with were the following:

The Registration of Specialists. There was a long debate on this matter and on the recent postal vote of Association members. Eventually a motion was moved to rescind the 1948 resolution of Federal Council, which was in favour of a specialist register, and this was lost on a ballot vote by 24 to 15. A motion to appoint a committee to investigate the subject was approved.

Committee on Enquiry into the Head Office and Journal Administration. Most of the recommendations of the report by Dr. A. J. Orenstein and Mr. Sisson Cooper were adopted, but it was decided to continue to issue the *Journal* weekly; to continue the advertisements which are interleaved in the text; and to leave open the question of the use of English and Afrikaans in the Editorials. The part-time appointment of Mr. W. Fone (for many years Chief Sub-Editor of the *Cape Argus*) as Assistant to the Editor was approved. The lowest tender for the printing of the Journal during 1954 was accepted, and the Head Office and Journal Committee authorized to use a lighter paper.

Central Committee for Contract Practice. A long report by this Committee, which had sat on 13 and 14 October immediately before the Federal Council meeting, was presented by the Chairman, Dr. C. A. H. Green. In the discussion of this report, comment was made by some members on what they regarded as abnormally high operation fees charged in certain new specialities. Members also expressed the view that it was anomalous that different fees should be chargeable for injections by general practitioners and specialists respectively.

A Committee was appointed to consider the whole question of fees, to consult Groups of the Association or other sources of information, and to submit a memorandum.

Composition of the South African Medical and Dental Council. It was reported that a memorandum on the subject had been presented to the Medical Council on behalf of the Association. Different views were expressed as to the importance of the proportion of elected medical members. There was a discussion on the desirability of dividing the Medical Council into separate Medical and Dental Councils. It was resolved to approach the Minister on the latter subject.

Parliamentary Committee. The matter of whether income tax should be paid by medical practitioners on receipts or on accruals was referred back to the Committee to negotiate.

It was decided that in future the Chairman of the Committee should be at Pretoria and the Vice-Chairman at Cape Town. Dr. J. H. Struthers and Dr. J. P. de Villiers were respectively appointed.

Insurance Against Costs and Damages in Cases Against Doctors of Alleged Negligence, Assault, etc. This matter

was discussed, and it was decided to support the Atlas Assurance Company in their appeal to members on the subject of obtaining adequate written consent before operations and other procedures.

Workmen's Compensation Act Sub-Committee. The Minister had been approached re W.C.A. fees but no conclusion had been reached.

It was reported that the W.C.A. Commissioner was refusing to pay fees to general practitioners for radiological services if there was a specialist radiologist available. It was decided to press for a change in this ruling.

Provincial Health Services. The possibility was mentioned that a means-test for free hospital services in the Cape Province might be introduced by Ordinance.

Van der Bijl Park Medical Benefit Fund. It was reported that no more full-time appointments would be made except after consultation with the Association. Some part-time appointments were pending.

Motor Industry Sick Benefit Fund. The Southern Transvaal, Northern Transvaal and East Rand Branches were asked to continue negotiations on matters in dispute.

Emeritus Membership. Drs. F. P. Bester and C. E. L. Burman were elected Emeritus Members.

Port Elizabeth Congress. It was intimated that Dr. Collins would preside at the Congress in June 1954.

Vice-President of the Association. Dr. I. E. Lane, of Port Elizabeth, was elected as Vice-President and President-Elect.

The President and Mrs. Collins entertained the members of Federal Council and others to a party; the de Beers Consolidated Mines Limited invited members of Federal Council to an exhibition of diamonds; and a public meeting was held in Kimberley Town Hall at which the President, Dr. Collins, delivered an address and the Mayor of Kimberley (Councillor G. B. Haberfeld) also spoke.

[*N.B.*—The above is a preliminary unofficial report. The official Minutes will be published in the *Journal* in due course.—*Ed.*]

PASSING EVENTS

SOUTH AFRICAN MEDICAL AND DENTAL COUNCIL ELECTION

The *Journal* will be glad to publish particulars concerning candidates for election to the South African Medical and Dental Council. Copy should be received at least 10 days before the date intended for publication, and should not exceed 250 words in length.

UNION DEPARTMENT OF HEALTH BULLETIN

Report for the seven days ended 1 October 1953

Plague, Smallpox: Nil.

Typhus Fever: One further case notified from the Queenstown municipal area since 24 September 1953. Diagnosis confirmed by laboratory tests.

Epidemic Diseases in Other Countries:

Plague: Nil.

Cholera in Bombay, Calcutta, Madras, Nagapatinam (India); Dacca (Pakistan).

Smallpox in Bombay, Cochin, Madras, Masulipatnam, Nagapatinam (India); Haiphong, Saigon-Cholon (Viet-Nam); Phnom-Penh (Cambodia).

Typhus Fever: Nil.

NAPT COMMONWEALTH SCHOLARSHIPS

The National Association for the Prevention of Tuberculosis announces a new scholarship for doctors in the Commonwealth, made possible through the generosity of a private donor, and to be known as the NAPT Commonwealth Hunter Scholarship.

The award will be £350, to enable a young graduate from a medical school in the Commonwealth, outside the United Kingdom, to study tuberculosis in Great Britain. The intention of the award is to provide training and experience to a doctor who will subsequently play his part in the control of tuberculosis in his own country.

Apart from the Hunter Scholarship, the NAPT has for some years given 8 scholarships each year to doctors, nurses and sanitary inspectors whose names have been submitted through the Colonial Office by various Colonial Governments. This facility is now extended to candidates from all parts of the Commonwealth, recommended by their own Minister of Health or Director of Medical Services, as the case may be.

Inquiries concerning the above scholarships, and other awards made by the NAPT, should be sent to: NAPT, Tavistock House North, Tavistock Square, London, W.C.1. The closing date for considering applications for the NAPT Hunter Scholarship will be *31 March 1954*.

APPOINTMENT SPECIALIST POSITION PRIVATE HOSPITAL IN KRUGERSDORP

The attention of all members is drawn to the fact that the branch council of the Southern Transvaal is making further inquiries with regard to the above appointment. It is suggested therefore that the successful applicant should communicate with the Secretary of the Southern Transvaal Branch before signing any contract or assuming duties.

INTERNATIONAL CONGRESS OF OPHTHALMOLOGY

The Seventeenth International Congress of Ophthalmology will, as already announced in this *Journal*,* be held at Montreal, Canada, on 10 and 11 September and at New York City on 12–17 September 1954.

Two main subjects for discussion have been announced, viz. *Primary Glaucoma* (aetiology and general considerations, medical treatment, surgical treatment) and the aetiology of *Uveitis* (general considerations, allergic factors, the rôle of viruses). The rest of the time will be devoted to papers by authors on subjects of their own choosing. Those wishing to participate in the main discussions or to present papers should apply on the prescribed form without delay to the Secretary-General (Dr. W. L. Benedict), Seventeenth International Congress of Ophthalmology, 100 First Avenue Buildings, Rochester, Minn., U.S.A. Papers published before the Congress are not acceptable. The responsible committee reserves the right of selection.

The Congress will include exhibitions, clinical demonstrations and films. A programme of social activities is being planned for members of Congress and accompanying members of their families.

Any qualified medical practitioner is entitled to membership. The registration fees for full members other than those from North America is $15, and $5 for associates.

Brochures and forms of application can be obtained from the Secretary-General at the above address.

* 26 September 1953, p. 862.

EXHIBITION IN LONDON OF APPARATUS FOR PHYSICAL THERAPY

Organized by a voluntary committee from the Electro-Medical Trade Association of Victoria Street, London, S.W.1, and held in conjunction with the first Congress of the World Confederation for Physical Therapy an international exhibition of apparatus for physical therapy took place in the Central Hall, Westminster from 7 to 12 September. It was opened by the Rt. Hon. Iain N. Macleod, Minister of Health.

While American manufacturers did not participate, the

exhibits were representative of the best European productions to-day, and included several items shown for the first time.

Diagnostic appliances displayed included several types of myograph, electrical stimulators, various electrocardiographs including a new direct-writing type, and an electronic recording clinical thermometer.

Aids for nursing the acutely ill included respirators ('iron lungs'), one newly built to Ministry of Health specifications; electric blankets, compresses, pads, etc., including the 'Qray' radio-active type, bed cradles, bed cranes, the new Guthrie-Smith slings for total suspension of patients, etc.

Bracketing both palliative and remedial treatment, there was a wide variety of choice among infra-red ray lamps and 'tunnels', paraffin wax baths, and other therapeutic heat appliances.

Remedial equipment proper grouped itself under many headings. Electro-therapy treatment units, producing up to six different types of current for direct stimulation of muscles and internal organs, included the 'Electrostat', 'Neurotron', and many other types. Schnee baths for local galvanic treatment were shown of the modern plastal manufacture.

The progress of short-wave diathermy treatment was illustrated by models, among which were the 'Autotherm' 'Inductotherm' 'M.S.400', 'Megatherm', 'Radyne', 'Ultratherm', and other models, included a new design which incorporates automatic treatment control and is claimed to raise short-wave therapy to a scientific level.

Mechano-therapeutic apparatus included devices for neck-traction, arm abduction, etc., a spinal vibro-extensor, portable vibratory apparatus, appliances for re-educating finger movements, the 'Pursey' leg exerciser, occupational therapy equipment, and other appliances. Hydro-therapy was represented by model pools, bath slings, etc.

A new development in ray therapy equipment was embodied in an ultra-violet 'Alpine Sun' lamp which carries an independently switched radiant quartz infra-red emittor in the same reflector. The 'Centrosol', for collective irradiation, the 'Kromayer' Lamp for focal treatment, Prescription Lamps for use by patients, and fluorescence diagnosis lamps were also shown.

The aids to rehabilitation included the 'Horder' hydraulic chair which enables a paraplegic to pump himself from a sitting to a standing position, with little expenditure of energy. A range of specialized walking aids, furniture, and other appliances for spastics and cripples demonstrated the amount of useful activity which can be undertaken even by the severely handicapped with these modern appliances.

Furniture for the practitioner's use comprised treatment stools, plinths and couches, including an exceptionally light, collapsible massage couch which can be easily carried, erected within a few seconds, and is rigid when in use.

Ultra-sonic therapy was represented by three different makes of equipment, including the latest German model. In a class by themselves were the ultra-violet ray Bactericidal Units which are proving so valuable in reducing spread of infection within hospitals and other buildings.

Accessories for physical therapy also included the 'Sonotest' for measuring ultra-sonic intensities, the 'Servograph' recording galvanometer and electronic 'proximity meter' and a meter for measuring bactericidal radiation.

REVIEWS OF BOOKS

UP-TO-DATE THERAPEUTIC METHODS

Attualita Terapeutiche. By D. Campanacci and 17 Collaborators. (Pp. 352, with 17 illustrations.) Milan: Casa Editrice Dr. Francesco Vallardi. 1953.

Contents: Premessa. 1. Terapia delle anurie (L. Migone). 2. I nuovi anticoagulanti in terapia (W. Telò). 3. Terapia chirurgica dell'ipertensione essenziale (E. Malan). 4. Il Potassio in Terapia (D. Campanacci e W. Telò). 5. Sul trattamento dietetico dello scompenso di cuore (M. Falzoi). 6. Applicazioni di vitaminoterapia nel campo ginecologico (G. Nicora). 7. Spunti di terapia dietetica e medicamentosa dell'arteriosclerosi (D. Campanacci e G. Capretti). 8. Attuale orientamento terapeutico in campo di ipertensione essenziale (G. Capretti). 9. Indicazioni, controindicazioni e pericoli della terapia con ACTH e cortisone (U. Butturini). 10. Assistenza all'immaturo (A. Laurinsich e L. Landucci). 11. Le nuove vedute sul contributo della radiologia al 'problema tonsillare' (A. Rossi). 12. I moderni indirizzi terapeutici del tracoma (G. B. Bietti). 13. Gli androgeni nella terapia ginecologica (F. Vozza). 14. Sul trattamento del coma diabetico (D. Campanacci e U. Butturini). 15. L'acido glutammico in terapia neuro-psichiatrica (P. Ottonello e R. Rossini). 16. Nuovi metodi di cura dell'alcoolismo cronico (P. Ottonello e R. Rossini). 17. I barbiturici ad azione rapida e il sonno prolungato in terapia psichiatrica (P. Ottonello e R. Rossini). 18. La vitamina B12 (D. Campanacci e M. Falzoi). 19. Le nuove terapie del morfinismo (R. Rossini). 20. La penicillina nella terapia della sifilide (M. Tamponi). 21. Il trattamento ortopedico-chirurgico della poliartrite cronica primaria e dell'artrosi deformante (L. Bocchi). 22. L'impiego degli antibiotici nelle lesioni traumatiche e nelle malattie delle ossa e delle articolazioni (L. Bocchi). 23. Istamina ed antistaminici in terapia otorinolaringoiatrica (C. F. Porta).

This book sets out to present before the reader a comprehensive and authoritative review of up-to-date therapeutic methods in various fields of medicine. The subjects range from anuria to morphinism and include cardiac decompensation, trachoma, chronic alcoholism, essential hypertension, diabetic coma, etc. There are 2 articles on gynaecological disorders, one dealing with the use of vitamins and the other with the administration of hormones.

The surgical treatment of essential hypertension is discussed by E. Malan and the author with his homely non-Italian sounding name, after considering the various surgical procedures, gives his choice to that of Smithwick.

The reviewer of such a volume, should have a knowledge not only of the Italian language, but also of the many matters dealt with. The present reviewer has no great claims to this exacting requirement. But it can be said that the book is up-to-date and complete in its scope. Apart from the individual value of each separate article, the collecting together of so many critical appraisals of the most recent advances in therapy results in a useful compendium of knowledge.

In the chapter on alcoholism, the 2 authors responsible briefly consider types of drinkers and the effects of alcohol, and then examine in detail various lines of treatment, e.g. the administration of the various B vitamins by intravenous and intramuscular injection, and the intravenous injection of alcohol plus glucose, hepatic extracts and Vitamin PP. Another measure considered is conditioning of the alcoholic by the simultaneous administration of alcohol and apomorphine, whereby it is hoped that eventually the mere sight of drink will engender a feeling of nausea and repulsion.

The treatment of syphilis with penicillin, which has so profoundly altered the individual and communal prognosis of this disease, is exhaustively examined. The curative effect of this antibiotic is universally admitted, but what is not so clearly decided is whether arsenic or bismuth should be given in addition, especially in late syphilis. The tendency in Europe is to retain these drugs, in the U.S.A. to jettison them completely. The Americans base their attitude on the statistical analysis of the outcome of many thousands of cases, followed up with characteristic energy and thoroughness.

Radio-therapy in hyperplasia of the tonsils, glutamic acid in mental backwardness, the various indications of ACTH and cortisone, the rôle of antibiotics in traumatic and infectious arthritis, are some of the other therapeutic problems discussed in detail. But it would not be practicable to pass all these in review here. It is enough to say that this volume is packed with variety.

Like so many continental books, this work is bound with paper covers and some time must be spent in cutting the pages. The printing and general arrangement are good, the illustrations are simple line drawings adequately illustrative. Numerous authorities are quoted but only their names are mentioned. There are no references to the literature so that the reader anxious to consult other works has no ready guide to assist him.

This book must be a welcome addition to the bookshelves of our Italian colleagues. The English-reading physician would not encounter any great difficulty in following the Italian text; and he would in the process acquire a useful vocabulary.

PSYCHIATRY

The Cardboard Giants. By Paul Hackett. (Pp. 309. 15s.) London: Victor Gollancz Limited. 1953.

In recent years our medical educators have become increasingly concerned with the importance of psychiatry, in all its aspects, in medical training, and the appetite of the general public for entertainment centering in this sphere seems to have more than kept pace with this professional interest. Or is the reverse the case? The public demand may have compelled this changed orientation on the part of medical teachers. Whatever the reason, we have had in recent years a spate of books, plays and films, all dealing with sickness of the mind and its treatment. The psychiatrist, as is to be expected, will usually find his simple pleasures elsewhere, and is generally unimpressed by the naïveté of the lay author, playwright or film producer, though the general public laps it all up with gusto. The public will certainly find this book both interesting and entertaining, largely because it is well written and also because it has a happy ending. The professional reader will learn one important lesson and that is that the making of a clinical diagnosis in psychiatry must not imply a static nosological entity but rather a group of dynamic forces in flux, advancing, retreating and shifting in the interpersonal relationships of a culture. How else explain the cure of a case of paranoid schizophrenia?

CHEST DISEASES

Diseases of the Chest. Volumes I and II. Edited by Sir Geoffrey Marshall, *K.C.V.O., C.B.E.*, M.D. (Lond.), F.R.C.P. (Lond.) and Kenneth M. A. Perry, M.A., M.D. (Cantab.), F.R.C.P. (Lond.). (Pp. Vol. I–456; Vol II–412. £8 1s. 9d.) London and Durban: Butterworth & Co. Limited. 1952.

Contents: Volume I: 1. Broncho-Pulmonary Anatomy. 2. Applied Physiology of Respiration. 3. Acute Tracheo-Bronchitis. 4. Chronic Bronchitis. 5. The Pneumonias. 6. Chemical, Lipoid and Irradiation Pneumonias. 7. Whooping-Cough. 8. Fungous Infections of the Lungs. 9. Lung Abscess. 10. Epidemiology and Immunology of Pulmonary Tuberculosis. 11. Pulmonary Tuberculosis in Childhood. 12. Haematogenous Tuberculosis of the Lungs. 13. Bronchogenic Tuberculosis. 14. Pleural Tuberculosis. 15. Clinical Pathology of Pulmonary Tuberculosis. 16. Treatment of Pulmonary Tuberculosis. 17. The Chemotherapy of Pulmonary Tuberculosis. Index to Volume I.
Volume II: 1. Pleurisy. 2. Empyema. 3. Haemothorax. 4. Spontaneous Pneumothorax. 5. Calcification of the Pleura. 6. Transient Pulmonary Infiltration with Eosinophilia. 7. Polyarteritis Nodosa (Periarteritis Nodosa). 8. Asthma. 9. Emphysema of the Lungs. 10. Pulmonary Oedema. 11. Atelectasis. 12. Bronchiectasis. 13. Intra-Thoracic Manifestations of Carcoidosis. 14. The Reticuloses and Allied Disorders. 15. Honeycomb Lungs. 16. Cardio-Pulmonary Schistosomiasis. 17. Diseases of the Lung Caused by Flukes, Round-Worms and Amoebae. 18. Hydatid Disease of the Lung. 19. Syphilis of the Lung. 20. Pulmonary Embolism. 21. Blast Injuries of the Lung. 22. Pulmonary Haemosiderosis. 23. Occupational Lung Diseases. 24. Cysts of the Lung. 25. Tumours of the Lung. 26. Bornholm Disease. 27. Tumours of the Chest Wall. 28. Diseases of the Mediastinum. 29. Cysts and Tumours of the Mediastinum. 30. Diseases of the Diaphragm. 31. Anaesthesia in Chest Disease. 32. Physiotherapy for Chest Diseases. Index to Both Volumes.

These two volumes deal primarily with the medical aspects of chest diseases. Surgical conditions of the lung are summarily dealt with, while cardio-vascular and oesophageal lesions and abnormalities are not included at all.

The opening chapters of Volume I describe the bronchial anatomy and the physiology of respiration.

Under the chapter heading of 'The Pneumonias' such a large variety of morbid conditions are described that one is forced to the conclusion that the generic term is really used to indicate the physical sign of lung consolidation.

Another chapter deals with the causes and management of lung abscess.

The second half of Volume I is concerned with pulmonary tuberculosis, and the section dealing with collapse therapy and resection operations must be adversely criticized. Current views on the surgical management of pulmonary tuberculosis are still in a state of flux, and this section, which describes the surgical procedures with illustrated cases, certainly does not provide an answer to the vexed question of assessing the indications for specific major surgical operations. The author suggests that surgery plays a purely mechanical role, i.e. to produce adequate relaxation, and if one method fails, more radical procedures should then be attempted. His views on lung resection also show a conservatism which is not shared by the majority of the thoracic experts of to-day.

Volume II is concerned with a variety of pleural and pulmonary conditions, the chapter on atelectasis and bronchiectasis being of a particularly high standard. It is accepted as a fact that atelectasis is always a forerunner of bronchiectasis.

In the section on primary carcinoma of the lung, emphasis is placed on the low operability rate.

Concluding chapters embrace the subjects of physiotherapy and anaesthesia in relation to chest diseases.

These two volumes covering an extremely large field are well prepared and produced, and are a valuable acquisition to the bookshelves of those interested in this branch of medicine.

ENDEMIC SYPHILIS

Epidemiology and Control of Endemic Syphilis: Report on a Mass-Treatment Campaign in Bosnia. By E. I. Grin, M.D. World Health Organization Monograph Series No. 11. (Pp. 93. 5s.) Geneva: World Health Organization. 1953.

Contents: 1. Introductory Remarks on Bosnia-Herzegovina. 2. Origin and Extent of Endemic Syphilis. 3. The Concept of Endemic Syphilis. 4. Epidemiological Considerations. 5. Natural Course of Endemic Syphilis. 6. Organization of the Field Campaign against Endemic Syphilis. 7. Treatment of Endemic Syphilis with PAM and Schedules Employed. 8. Reducing the Reservoir of Infection. Summary. References. Annex: Studies on Treponemes from Cases of Endemic Syphilis.

The natural course of endemic syphilis, including its epidemiological, clinical, laboratory and other aspects, has not been adequately described in existing literature. This study represents an important contribution to the limited knowledge on the subject. The environmental factors and their influence on the perpetuation of the infection as an endemic disease and the course of the disease over decades are discussed, and original theories and new considerations are advanced explaining its behaviour in a primitive environment. A description is given of the different stages of the treatment campaign in Bosnia, in which more than 35,000 cases were treated with penicillin and promising results obtained. Dr. T. B. Turner and Dr. D. H. Hollander, of the International Treponematosis Laboratory Centre, Johns Hopkins University, have contributed an annex on studies of treponemes from cases of endemic syphilis. The volume is profusely illustrated with maps, figures and photographs.

LOCAL ANALGESIA IN ABDOMINAL SURGERY

Local Analgesia: Abdominal Surgery. By R. R. Macintosh, M.A., D.M., F.R.C.S., D.A. and R. Bryce-Smith, M.A., B.M., Ch.B., D.A. (Pp. 93 with 88 Figures. 22s. 6d.) Edinburgh: E. & S. Livingstone, Limited.

Contents: Introduction. 1. Indications for Local Analgesia. 2. Drugs. 3. General Considerations. *Anatomy from the Anaesthetist's Viewpoint.* 4. Pathways of pain. 5. Sensory Innervation of the Viscera. 6. The Anterior Abdominal Wall. 7. The Inguinal Canal. 8. The Paravertebral Space. 9. Nerves of the Abdominal Wall. *Techniques.* 10. Paravertebral Block. 11. Paravertebral Intercostal Block. 12. Angle Intercostal Block. 13. Midaxillary Intercostal Block. 14. Abdominal Intermuscular Block. 15. Rectus Block. 16. Iliac Crest Block. 17. Posterior Splanchnic Block. 18. Lumbar Sympathetic Chain Block. Index.

Probably the greatest difficulty, or disadvantage, of local analgesia lies in the fact that, if it is to be effective, it must be perfect. Less than perfection means loss of confidence on the part of all concerned, not least of whom are the patient and anaesthetist. The second major difficulty lies in learning the techniques of local analgesia, best done by watching an expert and by continued practice. Generally speaking, neither of these opportunities is forthcoming. The authors of this book set out—and in no small measure they succeed—to overcome the latter difficulties and, by so doing, overcome the first. They show, by means of many clear and accurate

diagrams and illustrations, how nerve-blocking rests on a sound anatomical basis and is not a difficult, half-mystical art.

At a time when a spirit of complacency seems to pervade anaesthesia, following the introduction of muscle relaxants, it may be well for anaesthetists to review the situation and consider whether perhaps local analgesics have not a very definite place in surgery. Certainly this book should be carefully studied by all practising anaesthetists.

MODERN TREATMENT YEARBOOK

Modern Treatment Yearbook 1953. Edited by Sir Cecil Wakeley, *Bt., K.B.E., C.B.*, LL.D., M.Ch., D.Sc., F.R.C.S., F.R.S.E.E., F.R.S.A., F.A.C.S., F.R.A.C.S. (Pp. 348 with illustrations. 21s.) London: Baillière, Tindall and Cox. 1953.

Contents: 1. Trigeminal Neuralgia and its Treatment. 2. The Modern Treatment of Rheumatic Fever. 3. The Position of Vaginal Hysterectomy in Modern Treatment. 4. The Problem of Venereal Disease and Its Treatment. 5. Medical Treatment of Peptic Ulcer. 6. Modern Treatment of Hydrocele. 7. The Medical Treatment of Chronic Backache. 8. Carcinoma of the Tongue. 9. Modern Treatment of Hypospadias. 10. The Treatment of Glioma Retinae (Retino-Blastoma) by Radium. 11. Modern Treatment of Cancer of the Thyroid. 12. Use and Abuse of the Administration of Penicillin in General Practice. 13. Modern Views on Treatment of the Menopause. 14. Observations on Virus Pneumonia. 15. Modern Treatment of Mental Disorders Associated with Pregnancy and Childbirth. 16. Management of the Arthritic Hip. 17. The Treatment of Carcinoma of the Bronchus. 18. The Treatment of Gunshot Wounds of the Abdomen. 19. Aetiology and Modern Treatment of Sterility in the Female. 20. Treatment of Fractures of the Knee-Joint. 21. The Modern Treatment of Eczema. 22. The Investigation and Treatment of Carcinoma of the Body of the Uterus. 23. Non-Tuberculous Affections of the Spine. 24. Modern Treatment of Lumbar Disc Lesions. 25. The Treatment of Intermittent Claudication. 26. Diseases of the Nails. 27. Modern Investigation and Treatment of Infertility. 28. Modern Treatment of Nasal Polypi. 29. Vomiting in Pregnancy. 30. Moniliasis. 31. Modern Trends in the Chemotherapy of Pulmonary Tuberculosis. 32. The Modern Treatment of Diseases of the Eyelids. 33. The Modern Treatment of Otosclerosis. 34. Modern Principles in the Treatment of Fractures. 35. Gastro-Jejunal Ulceration. 36. The Treatment of Coronary Thrombosis. 37. The Treatment of Burns. 38. Warts of the Skin and their Treatment.

The 1953 edition of the *Modern Treatment Year Book* is well up to the standard of the previous numbers. This edition has especially been written for the general practitioner in celebration of Coronation year, and so the reviewer is a little surprised to find that some of the articles are concerned with such subjects as the treatment of cancer of the thyroid, the treatment of glioma retinae by radium and the treatment of carcinoma of the bronchus, which are not conditions usually treated by a general practitioner. However, it does not matter to whom this book is directed because all the sections make good and clear reading, and are good medicine.

Here and there after reading actual treatments suggested, one is left a little in the air, and one feels sure that more dogmatism would not necessarily be out of place. In the sections on the treatment of coronary thrombosis it is suggested that the patient may on some occasions lie flat in bed because he may be more comfortable in that position. One feels sure that many physicians will disagree with this point. The section on indications for anti-coagulant therapy and the actual treatment should be read by all. A recent disaster in this country, due to ignorance of the drugs used, should not be repeated.

The diagrams and photographs in some of the sections are very informative and helpful. Like all its predecessors, this book can be recommended wholeheartedly to all doctors.

POCKET MEDICAL DICTIONARY

American Pocket Medical Dictionary, Nineteenth Edition: A Dictionary of the Principal Terms Used in Medicine, Nursing, Pharmacy, Dentistry, Veterinary Science and Allied Biological Subjects. (Pp. 639 + iv. South African price: £1 12s.) Philadelphia and London: W. B. Saunders Company. 1953.

The *American Pocket Medical Dictionary* first appeared 55 years ago and it has been thoroughly revised from time to time. This latest edition has been brought up to date and in addition a new format is a welcome change.

It is admitted that the larger *American Illustrated Medical Dictionary* is the source of much of its matter and that this smaller work is designed for convenient reference and is mainly for the use of persons engaged in forms of practice which are usually considered to be auxiliary to the practice of medicine and surgery.

A number of tables are included which have been completely re-written and in addition tables of bones and veins appear for the first time.

NURSING EDUCATION

Working Conference on Nursing Education. World Health Organization: Technical Report Series, No. 60. (Pp. 30. 1s. 6d.) Geneva: World Health Organization.

Contents: Preface. Introduction. 1. The Development of Nursing in the Total Health Programme. 2. The Type of Nurse Required. 3. The 'Situation Approach' in Teaching. 4. Ways in Which the 'Situation Approach' can be Developed. 5. Summary of Discussions. Annexes.

This is a report of a conference called during 1952 by the World Health Organization to study the problems of nursing. The first section deals briefly with the rôle and evolution of nursing care and then the report seeks to define the kind of nurse which is needed the world over—one who possesses the personality, the education and the degree of maturity which would enable her to be an effective force in communal society and able to adjust herself to changing circumstances.

Much is made of the 'situation approach' form of teaching and practical examples are included to illustrate this method. There is also a description of the ways in which this can be developed so that its effective application may be assured.

A table is included as an annexure showing the parts played by theory and practice in the systematic training of student nurses, and the whole report will prove to be useful reading for those who are interested in nursing education.

NATIONAL NURSING RESOURCES

Guide for National Studies of Nursing Resources. By Margaret G. Arnstein, R.N., M.P.H. Bulletin of the World Health Organization Supplement 7. (Pp. 36. 1s.) Geneva: World Health Organization. 1953.

Contents: 1. Conduct of the Study. 2. Questions Frequently Asked. 3. Finding Answers to the Questions. 4. How adequate is the Existing Nursing-Education System? Annex 1. Compilation and Classification of Data.

This guide has been prepared to aid governments in studying their nursing services and needs. It outlines one type of study which is intended to give a general view of the nursing situation in a particular area, to point to the most urgent problems, and to provide data on which a country may base its plans for nursing services. It suggests methods of conducting the study; questions which might be asked, and ways of obtaining answers to them; and a means of evaluating the adequacy of the existing nursing-education system. Included in an annexure are sample forms which may be used in obtaining and compiling basic information.

PSYCHOLOGICAL MEDICINE

Reason and Unreason in Psychological Medicine. By E. B. Strauss, M.A., D.M. (Oxon.), F.R.C.P. (Pp. 55 + xii. 8s. 6d.) London: H. K. Lewis & Co. Limited. 1953.

Contents: 1. Quo Vadimus? 2. The Concept of Causality. 3. Causality and Psychological Medicine.

Many will welcome the publication of these lectures, for in them a distinguished psychiatrist reflects on the logical and philosophical foundations of psychological medicine. Numerous readers will find particular stimulation in Dr. Strauss' strictures on psychoanalysis, and his criticisms merit respectful consideration. He has found it necessary to emphasize in his Preface that he has no emotionally over-determined bias against this sister discipline, a disclaimer made quite necessary by some of his statements. Freud and his followers are accused of assisting the rush of mankind towards its doom, because psychoanalysis has revealed the adult's tendency unconsciously

to retain his infantile patterns of behaviour—thus causing a 'frenzy of disillusioned materialism'. Freud's life- and death-instincts, concepts often found valuable in psychotherapy, are dismissed for not being 'true myths'.

Psychoanalysis has as its aim to help people to understand themselves and to live with purpose and happiness upon the earth; therefore it must disappoint Dr. Strauss, who requires from a system of medical psychology, apparently, clear indication how 'the spirit of man can also wing its way to the stars'. Some readers will doubt that the psychotherapist should urge a desire for sainthood, rather than help the patient to assume complete responsibility for his actions and to achieve tidy personal relationships. It is perhaps questionable that psychological medicine will be made more efficacious or valid by having an undefined theological system grafted on to it.

YEAR BOOK OF RADIOLOGY

The 1952 Year Book of Radiology (June 1951—June 1952). Edited by F. J. Hodges, M.D., F. L. Holt, M.D., H. W. Jacox, M.D. and V. P. Collins, M.D. (Pp. 416 with 387 illustrations. $7.50.) Chicago: The Year Book Publishers, Inc. 1952.

Contents: *Part I.* Diagnosis. 1. Introduction. 2. Technical Developments. 3. The Head. 4. The Spine and Extremities. 5. The Chest. 6. The Gastrointestinal Tract. 7. The Genitourinary Tract. *Part II.* Radiation Therapy. 8. Introduction. 9. Head and Neck. 10. Breast. 11. Gynecology. 12. Genitourinary System. 13. Blood Dyscrasias, Lymphomas and Allied Diseases. 14. Miscellaneous Conditions. 15. Hazards and Injuries. 16. Treatment Technics. 17. Physics and Dosimetry. 18. Radiobiology. Index. Index to Authors.

The present *Year Book of Radiology* is divided into diagnostic and therapy sections as in the past. The diagnostic section covers the usual wide field of literature, with only 30% of the extracts taken from the American radiological journals, and with over 50% from the general medical literature. This wide coverage makes it a useful book which will be read with advantage by most radiologists. The abstracts have been made clearly and concisely, and the illustrations have been chosen with careful discrimination. The choice of articles for abstraction is nicely balanced.

In the therapy section the same high standard of coverage has not been maintained. Italian, German and Russian literature have been neglected completely, while many insignificant contributions from obscure American journals have been included rather uncritically. Tumours of the head and neck, the breast, gynaecological diseases and diseases of the genito-urinary tract and of the reticulo-endothelial system are treated extensively, while all other systems are grouped under 'miscellaneous' conditions. The sections on radiation hazards and injuries, techniques, dosimetry and radiobiology are thorough and instructive. The large volume of experimental cancer research is largely neglected.

The reproductions are mainly positives, and for positives they are excellent. The expected high standard of production and reproduction is maintained. Probably few radiologists are so well read as to be able to dispense with this *Year Book*.

ANATOMIE EN PHYSIOLOGIE VIR VERPLEEGSTERS

Anatomie en Physiologie vir Verpleegsters. Deur W. Gordon Sears, M.D. (Lond.), M.R.C.P. (Lond.). Vertaal deur C. J. Albertyn, M.D. (Groningen), ARTS (Holland). (Pp. 374 + v, met 188 illustrasies. 16s.) Londen: Edward Arnold & Company; Alleenverkoper in Suid-Afrika: James Dall & Co. (Pty.) Limited, Johannesburg. 1951.

Inhoud: 1. Inleiding. 2. Die Skelet. 3. Die Gewrigte of Artikulasies. 4. Die Spierstelsel. 5. Die Bloedsomloop. 6. Die Bloed. 7. Die Lymphatiesestelsel. 8. Die Spysverteringstelsel. 9. Die Stofwisseling. 10. Die Asemhalingstelsel. 11. Die Urinestelsel. 12. Die Buislose Kliere of Endocrinestelsel. 13. Die Senustelsel. 14 Die Sintuie. 15. Die Voortplantingstelsel. Aanhangsel. Indeks.

'n Afrikaanse vertaling van W. Gordon Sears se bekende boek is iets waarna die mediese en verplegingsberoepe al lank uitgesien het. Ons is dr. C. J. Albertyn derhalwe besonder dankbaar vir sy uitstekende vertaling wat onlangs deur Edward Arnold en Kie uitgegee is.

Sears se *Anatomy and Physiology for Nurses* het so gewild geword onder suster dosentes, geneeshere en leerling-verpleegsters sedert dit vir die eerste maal in 1941 uitgegee is, dat dit skaars nodig is om veel oor die stofgehalte van die boek te skrywe. Hierdie leerboek word veral gekenmerk deur die praktiese benadering van die onderwerp, die saaklike indeling en die 188 afbeeldinge wat die onderwerp helder toelig. Dit is 'n besonder goed gebalanseerde boek, wat die gulde middelweg behou tussen 'n te skrale inhoud en 'n onnodige verdieping in die besonderhede van anatomie en physiologie.

Dr. Albertyn se vertaling behou die gees van die oorspronklike en is in 'n vloeiende, maklik leesbare styl geskrywe. Die keuse van enkele Afrikaanse vakterme kan gekritiseer word, maar aangesien die Afrikaanse mediese vakterminologie nog nie stabiliteit bereik het nie, sal sodanige kritiek noodwendig deur persoonlike keuse gekleur wees.

In die geheel huiwer ek nie om die mening uit te spreek dat hierdie een van die beste Afrikaanse werke op geneeskundige gebied is wat die mediese en verplegingsberoepe tot dusver aangebied is.

BLOOD CELLS AND PLASMA PROTEINS

Blood Cells and Plasma Proteins, being No. 2 of the Memoirs of the University Laboratory of Physical Chemistry Related to Medicine and Public Health, Harvard University. By 29 Contributors, Edited by James L. Tullis. (Pp. 436. $8.50.) New York: Academic Press Inc. 1953.

Contents: *Section* 1. The Formed and the Fluid Parts of Human Blood: Their Discovery, Characterization, and Separation by Virtue of Their Physical Properties and Chemical Interactions. *Section* 2. The Factors Concerned with Blood Coagulation. *Section* 3. The Components of Human Blood Concerned with Immunity. *Section* 4. Erythrocytes. *Section* 5. Leucocytes. *Section* 6. The Enzymes of Plasma. *Section* 7. The Lipoproteins of Blood and other Tissues. Author Index. Subject Index.

This is a book for the physiologist, biochemist and physician who are interested in the blood and particularly in its coagulation and in the processing of blood-transfusion products. It gives an account of the fractionation of the plasma proteins with the aid of zinc and mercury ions which yields products showing a minimum of denaturation. This section is written by Dr. Edwin Cohn, who is responsible for the method of fractionation by alcohol and cold. The complexity of this method is emphasized, and with its five variables—temperature, pH, ionic strength, protein and alcohol concentrations—it affords such a gamut of combinations that further fractionation is more than probable.

Capetonians will be interested to note that part of the account of coagulation is written by Dr. J. H. Ferguson and that Dr. Budtz-Olsen's work on clot-retraction is freely quoted.

The separation of platelets by means of ion-exchange resins charged with calcium and their elution by acetate solutions provides a new material for physiology and medicine. Transfusions of these platelets have in fact been given to platelet-deficient recipients. Platelets may be easily preserved for periods of up to a year. The book deals also with the physiology of the red cells and various leucocytes, and ends with an interesting account of the plasma lipoproteins.

NERVOUS SYSTEM

Different Forms of Signalling Employed by the Nervous System. By Bernhard Katz. An Inaugural Lecture delivered at University College, London, on 31 January 1952. (Pp. 18. 4s.) London: H. K. Lewis & Co. Limited. 1952.

Professor Katz recently succeeded Professor A. V. Hill as Head of the Biophysics Department at University College, London, and the pamphlet under review is his inaugural lecture. It is an account, presumably given before an audience of mixed scientists, of recent advances in our knowledge of nerve conduction, viewed chiefly from the aspect of electrical changes. The core-conductor theory is well described, as are its implications in synaptic and neuro-muscular transmission. We can recommend this lecture to those who wish to have a readable account in non-technical language of recent advances in this field of physiology.

CORRESPONDENCE

THE CAUSE OF ESSENTIAL HYPERTENSION

To the Editor: Dr. Goldstone[1] was mistaken when he wrote in the issue of 29 August 1953 that my intention in referring him[2] to my paper[3] was to answer 'all his doubts' on the cause of essential hypertension. My object was merely to help him find an answer to certain points he had raised in his letter.

Three points in Dr. Goldstone's letter call for attention. They concern certain of his beliefs which may be enumerated thus:

(1) It is a simple matter to test my theory of the cause of essential hypertension by estimating the amounts of thyroxine and noradrenalin in the blood of hypertensives.

(2) The elevation of the blood pressure in essential hypertension and in phaeochromocytoma is mediated by different mechanisms.

(3) Thyroid treatment is harmful in hypertensives who have reached the arteriosclerotic age.

Dr. Goldstone's statement that 'he should test his theory *merely* by estimating the amounts of these substances' clearly indicates that he considers this a simple matter. He will find few pathologists to agree with him. The last with whom I discussed the matter agreed with me that the various methods which had hitherto been used for the estimation of the pressor amines were unsatisfactory, that the procedures were complicated and indirect and that little reliance was to be placed on the results.

Discussing the difficulties in diagnosing a phaeochromocytoma (where large amounts of these substances must be present in the blood) Graham[4] says: 'Theoretically it should be possible to demonstrate increased amounts of circulating epinephrine or norepinephrine. . . . Epinephrine has actually been found by a number of investigators but others have been unsuccessful even after repeated attempts so that at present this approach cannot be regarded as a practical procedure.' According to Goldenberg,[5] norepinephrine and epinephrine determinations in urine as a diagnostic test for phaeochromocytoma as suggested by Engels and von Euler are hardly practicable . . . if the present procedures have to be employed.'

The results, too, of this particular procedure have been contradictory. While Holtz in 1947 was able to demonstrate excessive amounts of noradrenalin in the urine in essential hypertension, Goldenberg was unable to confirm this. Again von Euler's demonstration in 1952 of an increase of pressor amines in the urine in this condition was not accepted by Burn[6] in 1953. The latter's results, however, are not quite contradictory, for while the figures in a group of moderate hypertensives (mean 170 mm. Hg systolic) were much lower than in 3 cases of phaeochromocytoma, they were higher than in a control group of normotensives (80 µg. as compared with 71).

With regard to thyroxine, recent radio-active iodine studies, which purport to be reliable methods of estimating thyroid function, reveal much the same degree of uncertainty. In a recent study of thyroid function in non-endemic *cretinism* (June 1953) Girr and Hutchison[7] state that 'most of the amounts of protein-bound iodine found in the plasma of our cases suggested *hyper*thyroidism and might readily without reference to the clinical picture have been interpreted as indicating thyrotoxicosis'.

The problem then, of estimating these substances in the blood and in the urine is not quite the simple matter which Dr. Goldstone imagines.

Coming to Dr. Goldstone's second belief, namely, that the mechanisms responsible for the elevation of the blood pressure in phaeochromocytoma and in essential hypertension have little in common, I find myself in complete disagreement. I feel that the differences between the two are readily explained by differences in the *amount* of noradrenalin excreted and by variations in the relative amounts of noradrenalin and *adrenalin* in phaeochromocytoma and in normal chromaffin tissue respectively.

I would remind your correspondent firstly, that the noradrenalin content of phaeochromocytomas may vary from 14 to 97%[5] and secondly, that the action of *adrenalin* depends on whether the 'dose' is 'physiological' or 'pathological'.[5] Further, the large number of tests which have been elaborated to differentiate between the two conditions speaks eloquently of the difficulty we experience in separating them.

Finally, the numerous false positives and false negatives on both sides in these tests (including the cold pressor test and the piperoxane test) strongly suggest that we are dealing with a quantitative rather than with a qualitative difference.

A number of observers support these views. Referring to the paroxysms, Cahill[8] states: 'The attacks are such as would be precipitated by a symptom-producing dose of epinephrine and norepinephrine. The variations seen . . . can be simulated by the relative amounts of these drugs when administered.' According to Goldenberg,[5] 'The clinical picture of these cases is often indistinguishable from that of essential and malignant hypertension.' 'The classical type of phaeochromocytoma is characterized by paroxysms which are comparable to the effects of a rapid intravenous dose of epinephrine and/or norepinephrine.' 'Small tumours which contained norepinephrine predominantly (90–90%) . . . gave a syndrome mimicking essential hypertension.' Green,[9] too, agrees: 'The resemblance between phaeochromocytomic hypertension and idiopathic (essential) hypertension suggests the operation of basically similar mechanisms in the production of both diseases.'

It would appear, then, that in attempting to differentiate between the mechanisms underlying the two conditions, Dr. Goldstone is splitting hairs.

Finally, with regard to Dr. Goldstone's belief that thyroid medication is harmful, I would like to point out that I have stressed on *three* occasions in the pages of this Journal the fact that coronary thrombosis was a complication to be feared and indicated how it could be circumvented. In my paper[10] published in December 1952, not only was the matter fully discussed, but a case was actually described.

Coronary thrombosis is a complication common to the use of all drugs which lower the blood pressure. It is so because the coronary arteries depend for their filling on the diastolic pressure. If there is a marked degree of coronary narrowing, as occurs in cases of angina of effort (the history and an exercise tolerance test will reveal this), then thyroid medication *might* bring about coronary thrombosis.

If cases of angina of effort are excluded and if the less important contra-indications enumerated in the above-mentioned report are observed, then, I can assure all who are prepared to use thyroid extract that it is indeed a harmless substance.

Pericles Menof.

607 Medical Centre,
Jeppe Street,
Johannesburg.
6 October 1953.

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Medical Association of South Africa

P.O. Box 643 · Cape Town

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AGENCY DEPARTMENT : AGENTSKAP-AFDELING

KAAPSTAD : CAPE TOWN

Posbus 643, Telefoon 2-6177 : P.O. Box 643, Telephone 2-6177

PRAKTYKE TE KOOP : PRACTICES FOR SALE

(1421) Klein Karoo. Praktyk gelee in ryk woldistrik. Geen opposisie. Spoorwegaanstelling teen £740 per jaar. Gemiddelde jaarlikse inkomste oorskry £2,500. Premie van £1,500 sluit in instrumente en medisyne.

(1437) Prescribing practice in Transkei, 90% native and therefore cash. Gross takings over £2,000 p.a. including contract of approximately £150 p.a. Little night or week-end work, definite scope for expansion. No surgery and little maternity done. Easy travelling distance from sea. Surgery for hire at £5 p.m. Owner going overseas and therefore prepared to sacrifice at £600 for quick sale.

(1483) South-Eastern Cape hospital town near sea. Average annual receipts approximately £5,250. Premium required £2,750. (£1,500 cash, balance in monthly instalments.) House and surgery to let. Excellent opportunity for practitioner to expand if surgery undertaken.

(1484) WESTELIKE PROVINSIE. Uitstekende geleentheid om praktyk in hospitaaldorp te bekom. Besonderhede op aanvraag.

E.N.T. SPECIALIST

Partnership offered in a growing E.N.T. practice. Two appointments at present and a third would be available to the incoming man. Premium required £1,250.

OPHTHALMIC PRACTICE FOR SALE

(1325) Excellent opportunity to acquire expanding practice with 2 appointments. The area served is enormous and the population is steadily becoming specialist conscious. Present income approximately £3,000 per year. Possibilities for expansion are exceptionally good.

CONSULTING ROOMS TO LET

(1422) St. George's Street, Cape Town. Share waiting room, services nurse receptionist, sole use of one consulting room. (Quote also 1476.)

* * * *

JOHANNESBURG

Medical House, 5 Esselen Street, Telephone 44-9134-5, 44-0817
Mediese Huis, Esselenstraat 5. Telefone 44-9134-5, 44-0817

PARTNERSHIPS OFFERED : VENNOOTSKAPPE AANGEBIED

(P/O21) Half-share in essentially English-speaking private practice in Johannesburg. Gentile with 3 to 4 years' experience. Premium £2,500.

(P/O22) Reef hospital town. Half-share in a very well-established practice. Income 1953 was £8,300, mostly cash. Practice is 50% European-prescribing and 50% non-European dispensing and prescribing. Well-organized practice and very little night work. Preferably Jewish doctor.

(P/O24) Randse hospitaaldorp. Premie £1,500 en terme kan gereel word. Dit is 'n goedgevestigde praktyk en alleen persone met *ondervinding in chirurgie* sal in aanmerking geneem word, vandaar die lae premie.

(P/O25) Transvaal hospital town. Jewish partner is required. Well-established practice with an average annual income of over £5,000. All surgical facilities. Premium required is £2,000 and easy terms could be arranged.

PRAKTYKE TE KOOP : PRACTICES FOR SALE

(Pr/S82) Excellent non-European practice near Johannesburg. Established in 1944. Average annual *net* income £2,700 cash. Premium required is £2,000 and terms can be arranged. Premium includes contents of surgery and maternity ward.

(Pr/S78) Oud-gevestigde Vrystaatse praktyk met D.G. aanstelling. Gemiddelde jaarlikse inkomste oorskrei £4,000. Premie van £2,000, sluit medisyne en apparate in. Uitstekende geleentheid vir 'n jong man.

(Pr/S84) Pleasant town in Northern Transvaal, with hospital facilities. General practice which was run by seller for 10 years besides a large non-transferable mine appointment. The appointment did not allow time for any Native work—only for very few district calls. Net cash income over £1,200 per year though only few hours daily were spent in this practice. Premium £500 on terms. Excellent start for young man.

(Pr/S85) Progressive Transvaal dispensing practice. Excellent surgical facilities. Average gross income £3,500 per annum. Premium required £2,500 and the following terms could be arranged: £1,250 deposit and the balance over a period of 18 months, starting 3 months after cash payment. The premium includes drugs, furniture and fittings, estimated at £800. Two transferable appointments worth £230 per annum. Scope for expansion.

(Pr/S87) Wes-Transvaal. Uitstekende praktyk. Gemiddelde jaarlikse inkomste oorskrei £3,000. Woonhuis en spreekkamers te koop of te huur teen £14 en £11 per maand, onderskeidelik. Premie verlang is £1,500 en terme kan gereel word. Skryf om volle besonderhede.

(Pr/S90) Transvaal. Uitstekende praktyk in hospitaaldorp. Twee aanstellings. Inkomste oorskry £5,000. Ideale praktyk vir 2 geneeshere. Premie verlang is £2,500 en sluit medisyne, voorraad en instrumente in.

FOR SALE

(I/O54) Second-hand Beck Lee photographic cardiograph in good order. What offers?

(I/O55) Zeiss Comberg slit lamp corneal microscope, complete, as new. £130.

* * * *

DURBAN

112 Medical Centre, Field Street. Telephone 2-4049

PRACTICES FOR SALE : PRAKTYKE TE KOOP.

(PD15) General practice established 1941 at pleasant residential and seaside resort about 10 miles south of Durban. Annual income approximately £1,000. No major surgery, minimum of minor surgery and only emergency midwifery being done at present. Brick house with consulting room attached, for sale at £5,250. Owing to ill health owner wishes to retire from practice as soon as possible. Premium £1,000 including drugs, surgery and dispensary furniture.

(PD20) Natal South Coast. General mixed prescribing practice. Premium £1,000 plus £200 for full equipment of 2 surgeries. Large proportion of the patients are European visitors, and Indians. A lucrative Native practice could be built up if dispensing was carried out. Immediate introduction.

(PD21) East Griqualand. General mixed practice with net profit of £3,000 annually. Premium £1,900, terms if required. Excellent opportunity for newly qualified practitioner.

(PD22) Natal. Prescribing and dispensing country practice. Total gross receipts for 1951, £3,344 15s. 9d.; 1952, £2,817 10s. 6d.; 1953 (3 months), £846 6s. 10d. Premium £1,500, includes drugs, consulting room furniture and instruments. House for sale £5,500.

(PD23) Natal. Prescribing practice particularly suitable for a woman doctor interested in obstetrics and gynaecology. Total gross receipts for 1950, £1,570; 1951, £1,595; 1952 (6 months), £1,340; 1953 (3 months), £382. Premium £1,250, includes furniture, fittings, instruments, drugs and existing book debts.

(PD24) Natal South Coast. Practice suitable for doctor who does not want full time work. £250 for drugs, dressings, instruments, etc. No charge for goodwill. Small house on ¼ morgen, £1,600. Immediate occupation.

PARTNER REQUIRED

(PDX) Durban. General practitioner offers 45% partnership on 18 months' purchase. Applicants should be experienced and be able to put down a certain amount of capital.

Transvaalse Provinsiale Administrasie

VAKATURES BY PUBLIEKE HOSPITALE

Aansoeke word ingewag van kandidate met geskikte kwalifikasies vir die onderstaande poste by Publieke Hospitale in die Transvaal.

Aansoeke moet gerig word aan die Geneeskundige Superintendent of Verantwoordelike Geneesheer van die betrokke hospitaal en moet volle besonderhede bevat aangaande die ouderdom, professionele, akademiese en taalkwalifikasies, ondervinding en huwelikstaat van die applikant en moet voorts 'n aanduiding bevat van die vroegste datum waarop diens aanvaar kan word.

Lewenskostetoelae tans betaalbaar aan voltydse werknemers:

	Lewenskostetoelae	
Salaris	*Getroud*	*Ongetroud*
Oor £350	£320 p.j.	£100 p.j.

Van persone wat aangestel word, sal verwag word om bevredigende sertifikate in te dien, asook om hulle te onderwerp aan 'n geneeskundige ondersoek by die betrokke hospitaal.

Aansoekvorms is verkrygbaar van enige Transvaalse Publieke Hospitaal of die Provinsiale Sekretaris, Afdeling Hospitaaldienste, Posbus 2060, Pretoria.

Benewens jaarlikse salaris en lewenskostetoelae ontvang voltydse werknemers spoorwegkonsessie en word verlof toegestaan ooreenkomstig die hospitaal verlofregulasies.

Die sluitingsdatum van aansoeke vir die poste is 2 November 1953.

Hospitaal	*Vakature*	*Salarisskaal*	*Opmerkings*
Baragwanath Hospitaalbestuur en die Universiteit van die Witwatersrand	Assistent Geneesheer (Departement van Medisyne) (2)	£1,200 × 50 —1,500	Geregistreerde mediese praktisyn. Hoër kwalifikasies in Medisyne 'n aanbeveling.
Baragwanath Hospitaalbestuur en die Universiteit van die Witwatersrand	Assistent Ortopediese Chirurg (1)	£1,200 × 50 —1,500	Geregistreerde mediese praktisyn. Hoër kwalifikasies in Ortopedie 'n aanbeveling.
Coronation Hospitaalbestuur en die Universiteit van die Witwatersrand	Assistent Mediesebeampte (Ongevalle Departement) (1)	£620—900 × 40— 1,020	Geregistreerde mediese praktisyn. Met ten minste twee jaar ondervinding. Kliniese en administratiewe dienste.
Johannesburg Hospitaalbestuur en die Universiteit van die Witwatersrand	Narkotiese Registrateur (3)	£620—780 —820— 860	Geregistreerde mediese praktisyn. Moet vir ten minste twee jaar gekwalifiseerd wees.
Pretoria	Kliniese Assistent (Departement van Medisyne) (1)	£620—780 —820— 860	Geregistreerde mediese praktisyn.

(42855)

Provincial Administration of the Cape of Good Hope

APPOINTMENT OF HONORARY MEDICAL STAFF

SOMERSET HOSPITAL

Applications are invited from registered medical practitioners for appointment to the following posts on the Honorary Medical Staff of the Somerset Hospital, Green Point, Cape Town.

Appointment will be made, subject to the provisions of Ordinance 18 of 1946, as amended, and the regulations framed thereunder.

Applications containing particulars of age, qualifications and experience should be furnished, so as to reach the Medical Superintendent of the Somerset Hospital not later than Friday 13 November 1953.

Hon. Visiting Medical Officers	*G.P.'s*	10
Hon. Anaesthetists	*Registered Specialists*	4
Hon. Surgeons	,, ,,	2
Hon. Orthopaedic Surgeons	,, ,,	2
Hon. Urologist	*Registered Specialist*	1
Hon. Gynaecologist	,, ,,	1
Hon. Thoracic Surgeon	,, ,,	1
Hon. Ophthalmic Surgeon	,, ,,	1
Hon. Ear, Nose & Throat Surgeon	,, ,,	1
Hon. Physician	,, ,,	1
Hon. Paediatrician	,, ,,	1
Hon. Pathologist	,, ,,	1
Hon. Neurologist	,, ,,	1
Hon. Specialist in Physical Medicine	,, ,,	1
Hon. Dermatologist	,, ,,	1
Hon. Dental Surgeon	,, ,,	1
Hon. Surgical Registrar	*Specialist*	1

A1483

Provinsiale Administrasie van die Kaap die Goeie Hoop

AANSTELLING VAN ERE-MEDIESE PERSONEEL

SOMERSET-HOSPITAAL

Aansoeke van geregistreerde geneeshere word ingewag vir aanstelling in ondergenoemde ere-mediese poste by die Somerset-hospitaal.

Die diensvoorwaardes word voorgeskryf ingevolge ordonnansie No. 18 van 1946, soos gewysig en die regulasies wat daar kragtens opgestel is.

Aansoeke waarin ouderdom en kwalifikasies vermeld word moet die Mediese Superintendent Somerset-hospitaal nie later as 13 November 1953 bereik nie.

Ere-Algemene Praktisyne	*A.P.'s*	10
Ere-Narkotiseurs	*Geregistreerde Spesialiste*	4
Ere-Chirurge	,, ,,	2
Ere-Ortopediese Chirurge	,, ,,	2
Ere-Uroloog	*Geregistreerde Spesialis*	1
Ere-Genikoloog	,, ,,	1
Ere-Neuro-Chirurg	,, ,,	1
Ere-Oogarts	,, ,,	1
Ere-Oor-, Neus- en Keelchirurg	,, ,,	1
Ere-Internis	,, ,,	1
Ere-Kinderarts	,, ,,	1
Ere-Patoloog	,, ,,	1
Ere-Borschirurg	,, ,,	1
Ere-Fisiese Geneeskundige	,, ,,	1
Ere-Dermatoloog	,, ,,	1
Ere-Tandarts	,, ,,	1
Ere-Chirurgiese Registrateur	*Spesialis*	1

A1483

Provincial Administration of the Cape of Good Hope

HOSPITALS DEPARTMENT

HOSPITAL BOARD SERVICE: VACANCIES

1. Applications are invited from registered medical practitioners for appointment to 2 posts of Medical Practitioner, Grade A, at the Victoria Hospital, Lovedale, with salary on the scale £500—600—660—720 per annum.

2. In addition to the scale of salary indicated a cost-of-living allowance at rates prescribed from time to time by the Administrator, is payable. (Current rates: Married men £320 per annum, others £100 per annum).

3. The conditions of service are prescribed in terms of Hospital Board Service Ordinance No. 19 of 1941, as amended, and the regulations framed thereunder.

4. The privileges of free board, quarters and laundering are not attached to these posts.

5. Application must be made on the prescribed form (Staff 23) which is obtainable from the Director of Hospital Services, P.O. Box 2060, Cape Town, or from the Medical Superintendent of any Provincial Hospital, or Secretary of any School Board in the Cape Province. Applications should be addressed to the Medical Superintendent of the Victoria Hospital, Lovedale, and must reach him not later than 30 November 1953.

(A562774)

Provinsiale Administrasie van die Kaap die Goeie Hoop

HOSPITAALDEPARTEMENT

HOSPITAALRAADSDIENS: VAKATURES

1. Aansoeke word ingewag van geregistreerde geneeshere vir aanstelling tot 2 poste van Geneesheer, Graad A, by die Victoria-hospitaal, Lovedale, met salaris volgens die skaal £500—600—660—720 per jaar.

2. Benewens die salarisskaal soos aangedui is 'n lewenskostetoelae teen bedrae wat van tyd tot tyd deur die Administrateur vasgestel word, betaalbaar. (Teenswoordige tariewe: Getroude mans £320 per jaar, ander £100 per jaar.)

3. Die diensvoorwaardes word voorgeskryf ingevolge die Ordonnansie op Hospitaalraadsdiens nr. 19 van 1941, soos gewysig, en die regulasies wat daarkragtens opgestel is.

4. Die voorregte van vry kos, inwoning en klerewas is nie aan hierdie poste verbonde nie.

5. Aansoek moet gedoen word op die voorgeskrewe vorm (Staf 23) wat verkrygbaar is by die Direkteur van Hospitaaldienste, Posbus 2060, Kaapstad of by die Mediese Superintendent van enige Provinsiale Hospitaal, of by die Sekretaris van enige Skoolraad in die Kaapprovinsie. Aansoeke moet aan die Mediese Superintendent, Victoria-hospitaal, Lovedale, gerig word en moet hom nie later as 30 November 1953 bereik nie.

(A562774)

City of East London

VACANCY FOR DEPUTY MEDICAL OFFICER OF HEALTH

Applications are hereby invited from suitably qualified persons for the permanent and established position of Deputy Medical Officer of Health on the salary scale £1,116 × 4 of £48—£1,308, plus prevailing cost-of-living allowance and a travelling allowance for use of private car.

Further details may be had from the undersigned by whom applications will be received up to and including 12 November 1953.

Canvassing of Councillors, directly or indirectly, will disqualify the applicant.

H. H. Driffield
Town Clerk

City Hall
East London
12 October 1953 (178)

Medical Man to Accompany Patient to England

The payment of a passage by air is offered to a medical man who will undertake to accompany a gentleman who is leaving for England by air on 5 December 1953 and will remain with him for two or three weeks after arrival, during which time the doctor's hotel expenses will be paid. The gentleman is a nervous case. Applicants should apply in writing to 'A. S. W.', c/o Barclays Bank (D., C. & O.), Main Road, Claremont, Cape.

Assistant Wanted

Assistant wanted with view to partnership in general practice in Southern Rhodesia. At least 3 to 5 years' experience. Salary £100 per month plus car expenses. Afrikaans an advantage. Write 'A. S. R.', P.O. Box 643, Cape Town.

Praktyk te koop

Karroo praktyk. Inkomste per jaar ±£2,000. Jong praktyk wat nog baie uitgebrei kan word. D.G. aanstelling wat ongeveer £700 per jaar werd is. Prys £700 wat medisyne en meubels insluit. Kamers teen £2 10s. per maand in hoofstraat gelee. £300 kontant en balans oor 12 maandelikse paaiemente. Skryf aan 'A. S. X.', Posbus 643, Kaapstad.

Practice for Sale

East coast city. Pleasant and well-established practice (average annual receipts about £2,500 gross) and attractive easily run house with half acre of garden for sale. Particularly suitable for English speaking doctor of experience. Most of consulting work is carried out at town rooms. Price practice and house £6,500. Write 'A. S. S.', P.O. Box 643, Cape Town.

Rosherville Medical Benefit Society

Applications are invited from registered medical practitioners for the position of part-time Medical Officer to attend to members of the above Society in the Panel Area of Alberton.

Further particulars can be obtained from the Secretary, P.O. Box 99, Cleveland.

(This contract has been approved by the Medical Association of South Africa.—*Assistant Secretary, M.A.S.A.*)

Locum Required

Locum required for December and January. Eastern Province Hospital town, partnership practice. Salary £80 per month plus board and lodging and car allowance. Apply 'A. S. V.', P.O. Box 643, Cape Town.

Assistant Required

Well experienced gentile doctor, bilingual, requires assistantship with view to partnership in Southern Cape. Also prepared to do just a locum for one or two months. Own car. Apply 'A. S. U.', P.O. Box 643, Cape Town.

Praktyk Verlang

Twee ervare geneeshere soek elk 'n praktyk, of saam een groot praktyk in dorp met onderwysfasiliteite; verkieslik Kaapprovinsie. Skrywe aan 'A. S. U.', Posbus 643, Kaapstad.

Printed by Cape Times Ltd., Parow, and Published by the Proprietors, THE MEDICAL ASSOCIATION OF SOUTH AFRICA, MEDICAL HOUSE, 35 Wale Street, Cape Town. P.O. Box 643. Telephone 2-6177. Telegrams: 'Medical'